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INDEX.

- Abdominal operations, the diet after, 150
surgery, ten years' experience in, 489
- Ability, scholarships must be awarded for, 392
- Abortion, treatment of, 49
- Abscess, peritonsillar—Hays, 650
- Abscesses, the treatment of multiple, 437
- Abuse of clinical and dispensary treatment, 395
the results of the, 396
of scholarships, the degrading, 392
- Accounts, a legal obligation to the prompt issuance of statements of, 558
- Accuracy of disinfection, 4
- Acromegaly, case of—Packard, 539
- Action of glandular extracts upon the secretion of urine—Ott & Scott, 79
- Actors, child, 564
- Address, presidents—Rongy, 93
—Dittrich, 597
- Administration of the public health—a forecast—Hoag, 471
- Adnexa, tuberculosis of the peritoneum, uterus and—Shoop, 70
- Affections, optic nerve, due to ethmoiditis — Schirmer, 429
- After treatment of injuries to the foot and ankle, importance of—Cilley, 323
- Again the anti-vivisectionists, 62
- Age to begin school, 610
- Aged, pneumonia in the—Wilcox, 223
- Alcohol, an antidote for—437
for soldiers, 556
treatment of wounds with, 545
in the tropics, 556
- Alienist, ignoring the, 164
- Allopathy is a misnomer, 342
- Alma mater, is it the man or his, 503
- Alum in ingrowing nails, 437
- Always room at the top, 163
- Amaurosis, hysterical—Fleckenstein, 410
- Amebiasis in the insane, 444
- America, long failure to recognize pellagra in, 444
- America, Socialism, 614
- American meats, wholesomeness of, 607
- American Medical Association needs no defence, the, 341
Medical Association, St. Louis meeting of the, 292
medical schools, the Carnegie Foundation report on the status of, 441
pharmacy and medicine, a loss to, 559
Pharmaceutical Association, 448
- Amylopsin, and trypsin in round celled sarcoma, successful use of, 162
- Ankle, importance of the after treatment of injuries to the foot and—Cilley, 323
- Announcement, 501, 558
- Antidote for alcohol, 437
- Anti-opium crusade, 296
crusade has been too precipitous, 296
- Antiseptic barber-shop, the so-called, 105
- Anti-vaccinationists, the, 558
- Anti-vivisectionists, again the, 62
false reasoning of, 162
- Anus, imperforate—Drueck, 319
- Apology, An, 347, 564
- Appalling results of contempt for sanitation, 106
- Appendicitis in children, 490
conditions simulating, 96
the diagnostic importance of the pulse rate in, 600
- Argument, fallacious promulgated by the "National League for Medical Freedom," 339
- Arsenic, new preparation, some further data concerning, Ehrlich's, 548
- Arterial relaxation of hot weather, 445
- Arthritis, the serum treatment of gonorrhea—Herbst, 427
- Arterio-sclerosis, alleged cause of, 612
prevention of, 612
- Arthur Conan Doyle, Sir, 562
- Artificial feeding of infants, 337
- Asininity, judicial, 99
- Assassin's cowardly blow, an, 391
- Association, American Pharmaceutical, 448
- Asthma, relation of nasal disease to hay fever and—Crane, 461
- Ataxia, Friedreich's, a case of, in a child five and a half years of age—Neustaedter, 477
- Athletic sports for health, 6
- Attacks on house disinfection, 104
upon the fomites theory of contagion, 3
- Attitude, proper, of the general practitioner toward the venereal diseases—Wolbarst, 257
- Authority, tyranny of, 7
- Aviation, 507
- Award of damages for typhoid, 239
- Babes, wisdom from the mouth of, 107
- Bacillary dysentery and plague, preventive vaccinations for cholera, 443
- Bacterio-phobia, 552
- Balsam Peru in the treatment of wounds, 438
- Barber-shop, the so-called antiseptic, 105
- Baths, oxygen, 49
- Beard, purpose of the, 447
- Bedside, common sense at the—Maxwell, 422
- Being supplanted, 390
- Beri-Beri and scurvy, 59
- Better organization of the profession, 157
- Bile pigment in urine, rapid method of detecting, 545
- Bills, doctor's, the dilatory payment of, 557
- Birth rate, large and socialism, 614
- Biting or sucking insects, dangers of, 550

- Bladder in the female, gonorrheal infection of the urethra and—Goelet, 316
 Bladder, neoplasms of—Berg, 306
 Blazeek twins, 492
 united twins, lactation in, 438
 Board should keep tab on colleges, 498
 Boards, medical examining, 496
 let the State Licensing, ordain a reasonably high standard, 507
 Body lice, transmission of typhus by, 550
 Blood pressure, some clinical observations on—Cowie, 632
 Book notices, 154
 Books of the year, 654
 Breathing, rapid and prolonged deep, the effects of, 237
 Business, or personal, side of a doctor's life—MacDonald, 509
 Burns, treatment of, 435
 Burnham's soluble iodine, 153
 But now comes opposition, 240
 Caisson disease, 108
 disease, newly discovered factors in, 108
 California, compulsory vaccination of public school pupils is declared unconstitutional, 292
 Campaign of the German Hospital of New York City against pulmonary tuberculosis—Breitenfeld, 34
 Camphor in pneumonia, 230
 Camphoric acid in night sweats, 437
 Canada and the United States, medical education in, 495
 Cancer, denials of any modern increase of, 498
 Cancer of the prostate, 660
 uterine, early diagnosis of, 542
 uterine, early recognition of, 490
 fish, governmental study of, 498
 the x-ray treatment of, 602
 Carnegie Foundation report on the status of American medical schools, 441
 Case of acromegaly—Packard, 539
 of Friedreich's ataxia in a child five and a half years of age—Neustaedter, 477
 Casoid foods, 234
 Catgut sterilization, 96
 Catsup, new pure food, 338
 Cause of tuberculosis, fear as, 243
 "Change of life," the, 60
 Changes, few needed, 293
 Child actors, 564
 Childbirth, superstitions of, 51
 Childhood, constipation in, 434
 Children, appendicitis in, 490
 school, defective development of, 499
 poor school, free meals for, 499
 pneumonia in—Kerr, 182
 Children, school, lunches for, 608
 symptomatology, complications and prognosis of pneumonia in—Heiman, 174
 who quit school, 610
 China, medical missionaries in, 97
 Chinese triumvirate, a, 439
 Cholera, bacillary dysentery and plague, preventive vaccinations for, 443
 Christian Science, 554
 Christianity, a patent medicine that antedates, 617
 Chronic disease, success in the treatment of—Harrower, 75
 gonorrhea, treatment of, 333
 typhoid carrier, problem of, 444
 Cigar, pipe and cigarette, 547
 Cigarette and cigar, pipe, 547
 City water, the waste of, 343
 Classes, survival of the lower, 291
 Clean, honest, capable pharmacist, 449
 Climacteric, the male, 59
 Clinical and social, aspects of trachoma—Brav, 406
 and dispensary treatment, abuse of, 395
 Clothing, opaque, is becoming popularized, 289
 Cocaine poisoning, ether in, 336
 Colleague, our extinguished, 619
 Collectanea Jacobi, 233
 Colleges, board should keep tab on, 498
 Colles' deformity, the replacement in adjusted—West, 415
 Colored underclothing in summer, use of, 289
 Commercial sale of marine quarantine, 4
 Commercialism of optometry, 344
 Common sense at the bedside—Maxwell, 422
 Complication, pneumonia as a post-operative—Morris, 218
 Complications and prognosis of pneumonia in children—Heiman, 174
 Conditions, post-dysenteric, 102
 simulating appendicitis, 98
 Conduct, the main lesson from San Francisco's, 107
 Confectionery and the various forms of pastry, the vending of fruit, 560
 Consanguineous marriages are not harmful, 394
 Constant increase of crime, 345
 Constipation in childhood, 434
 the treatment of, 148
 Consumption of sugar, increasing, 162
 Consumptive, psychology of, 549
 Consumptives, a sanatorium school for—Sohn, 591
 suggestibility of, 549
 unreliability of, 550
 Contagion, attacks upon the fomites theory, 3
 Continuance of high infant mortality, 291
 Contingent fee, the, 100
 Contribution to the study of hay fever—Leitner, 266
 a notable, to the surgery of glycosuria, 242
 Control, Federal, of stream pollution, 64
 Convulsions, treatment of, 491
 Cooling of hospital wards in hot weather, 101
 Cord, extensive degeneration in, myxo-sarcoma of the right frontal lobe—Price, 586
 Cost of maintaining a tuberculosis sanatorium, 494
 of meat, increasing, 159
 Cough, whooping, etiology of, 287
 Cramps, heat, 607
 Crime, the constant increase of, 345
 the passing of the insanity excuse for, 236
 Criminal unfit, sterilization for—Robertson, 349
 Criminals, responsibility of, 236
 sterilization of, 6
 Criminality has been called a medical problem, 345
 Culture and remuneration, medical library and its influence on medical—Holmes, 480
 Cure for obesity, a novel, 439
 Current interest, items of, 154
 Cystoscope in practice—Pinkham, 565
 Damage done by red light, 238
 Damages for typhoid, an award of, 239

- Damoclean sword of surgery, tetanus, 94
- Danger of nursing the tuberculous in sanitariums, 161
- of overwork, 551
- from the unvaccinated, 292
- Dangers of biting or sucking insects, 550
- Dangerous dogmas, 56
- Data concerning Ehrlich's new arsenic preparation, 548
- Death of Florence Nightingale, 440
- of Dr. Goelet, 282
- of Henri Dumont, the, 563
- of Dr. Howard T. Ricketts, 235
- of Robert Koch, 294
- of William James, 506
- Decay of medical sectarianism, 496
- Deciduoma malignum—Judd, 268
- Deep breathing, the effects of rapid and prolonged, 237
- Defence, the American Medical Association needs no, 341
- Defective development of school children, 499
- Definition of the practice of medicine, need of, 497
- Deformity, Colles', the re-displacement in adjusted—West, 415
- Degrading abuse of scholarships, 392
- Degeneration in cord, extensive; myxo sarcoma of the right frontal lobe—Price, 586
- Denials of any modern increase of cancer, 498
- Department of health, opposition to a national, 339
- of health, proposed national, 240
- Dermatologist as seen by the general practitioner—Rostenberg, 87
- Dermoids—Long, 530
- Detecting bile pigment in urine, rapid method of, 545
- Development of school children, defective, 499
- Diabetes mellitus, effect of febrile diseases in, 229
- mellitus, the surgical treatment of, 242
- Diagnosis of acute intestinal obstruction, 598
- of duodenal ulcer, 47
- fool's paradise, snap—Kerr, 512
- differential, of pneumonia—Stern, 169
- rheumatism—its symptoms and differential—Haas, 483
- of trichinosis, 433
- of twin pregnancy, 600
- of typhoid perforation, 286
- early, of uterine cancer, 542
- Diagnostic importance of the pulse rate in appendicitis, 600
- Diaphoresis in the treatment of ocular diseases, the therapeutic value of—Brav, 83
- Diarrheas, infantile, the infectious nature of, 96
- Diet after abdominal operations, 150
- low sugar, for infants, 397
- non-meat, results of, 160
- in pneumonia—Porter, 210
- in typhoid fever—Hall, 245
- in typhoid fever in children, 49
- Dietetic fallacies, 57
- knowledge, more, is imperative, 55
- Dietetics, the demand for professorships of, 55
- Difference between a sanitarium and a sanatorium, 547
- Differential diagnosis of pneumonia—Stern, 169
- Difficulties, obstetrics under, letter from Philippines, 147
- Digestion, relation of the nose to, 50
- Digitalis, the physiological action and the standardization of—Hensel, 594
- Diphtheria, the death rate from, 605
- Disease, caisson, 108
- nasal, relation of, to hay fever and asthma—Crane, 461
- newly discovered factors in caisson, 108
- phlyctenular—Brown, 313
- success in the treatment of—Harrower, 75
- the treatment of the hook worm, 602
- Diseases, nourishment in acute, 336
- ocular, the therapeutic value of diaphoresis in the treatment of—Brav, 83
- Dishonesty innate or acquired? is, 61
- Discussion of the venereal peril in lay literature, 101
- Disinfection, accuracy of, 4
- the ineffectiveness of much, 104
- Dispensary treatment, abuse of clinical and, 395
- Dispense, right to, 447
- Dispensing, question of drug, 448
- Doctor's bills, the dilatory payment of, 557
- life, personal or business side of—MacDonald, Jr., 509
- Dogmas, dangerous, 56
- Dogs, Pawlow—Rose, 330
- Double sewer system, a, 64
- Doyle, Sir Arthur Conan, 562
- Drinking cup, the public, 615
- Dr. Goelet, the death of, 282
- Howard T. Ricketts, the death of, 235
- Drug dispensing, question of, 448
- Drugs, adulterated, 619
- Drugs are absolutely essential, pure, 2
- Dunant, Henri, the death of, 563
- Duodenal ulcer, diagnosis of, 47
- Outbreak of smallpox, the recent, on our ships of war, 323
- Dysentery and plague, preventive vaccinations for cholera, bacillary, 443
- Dyspepsia, senile, 48
- Ear, the musical external, (illustrated)—O'Malley, 262
- Early case, 8
- symptoms of tetanus, 599
- Eastern Medical Society, 53, 94, 152, 234, 283, 604, 662
- Eclampsia, puerperal, successful cases of—Coughlin, 141
- Eczema, 660
- Education, medical, 442
- honesty is largely a matter of, 62
- in the United States and Canada, medical, 495
- industrial, the demand for, 615
- the purpose of public, 611
- the new, will be of slow development, 616
- Effect of febrile diseases in diabetes mellitus, 229
- Effects of rapid and prolonged deep breathing, 237
- Ehrlich-Hata's "606," 601
- Ehrlich's "606" interests in, 552
- new arsenic preparation, some further data concerning, 548
- therapeutic researches, 399
- Elbow, tuberculosis of, 434
- Elimination of nursing women, 397
- Eloquence of infancy—Kerr, 113
- Emigrants, the exclusion of degenerate, 609

- Enema in the treatment of certain intestinal diseases, the place of, 388
- Epilepsy, surgical treatment of—Carr, 65
- Essential factor, fear is an, 243
- Establishment of milk laboratories in the smaller cities, 396
- Ether in cocaine poisoning, 336
- Ethmoiditis, optic nerve affections due to—Schirmer, 429
- Etiology of tuberculosis, occupation as a factor in, 332
of whooping cough, 287
- Eugenics, 394
- Examining boards, medical, 496
- Expansion of races, 53
- Excessive light, the dangers of, 57
- Exophthalmic goitre, the symptoms of, 599
- Expectorants, 151
- Experience, ten years, in abdominal surgery, 489
- Experimental typhoid, 442
- Expert, the proposed laws exclude the partisan, 399
testimony, to reform, 399
- Eyestrain, a life of intense suffering and unrealized aims due to—Gould, 569
- Facial neuralgia, treatment of, 335
- Factors in caisson disease, newly discovered, 108
- Failure to recognize pellagra in America—Long, 444
- Fallacies, dietetic, 57
- False Prudery, 501
reasoning of the anti-vivisectionists, 162
- Family, large, the basic cause of poverty, 615
- Fate of the students who fail to get diplomas, 297
- Fear as the cause of tuberculosis, 243
is an essential factor, 243
phthisiophobia and normal, 244
- Febrile diseases in diabetes mellitus, the effect of, 229
- Federal control of stream pollution, 64
- Feeding of infants, artificial, 337
- Fee question, the, 99
the contingent, 100
- Female, gonorrheal infection of the urethra and bladder in the—Goellet, 316
students, superiority of, 297
- Fever, hay, a contribution to the study of—Leitner, 266
- diet in typhoid—Hall, 245
simple continued, 298
treatment of typhoid—Strong, 533
- Fevers, he fed, 56
- Few changes, 293
- Fight against quacks, post office, 161
- Fish cancer, governmental study of, 498
- Fistulae, tuberculous, the successful treatment of, 433
- Flat foot, observations on the treatment of—Soule, 451
- Florence Nightingale, the death of, 440
- Food, the cost of for one person, 608
- Foods, casold, 234
- Fool's paradise—snap diagnosis—Kerr, 512
- Foot and ankle, importance of the after treatment of injuries to—Cilley, 323
flat, observations on the treatment of—Soule, 451
- Football, dangers of modern, 5
- Forceps, obstetrics, 231
- Forms of heat and light stroke, prevention of all, 290
three, of sunstroke, 290
- Fomites theory of contagion, attacks upon, 3
- Free meals for poor school children, 499
- Freight, who pays the, 619
- French metric tyranny, 8
- Friedreich's ataxia in a child five and a half years of age—Neustaedter, 477
- Fruit, confectionery and the various forms of pastry, the vending of, 560
unwashed, 348
- Future American—Woodruff, 22
- Gastric juice from the living pig and its therapeutic application—Hepp, 522
- ulcer, treatment of, 231
- Gastroptosis and its causation, 147
- General practitioner, the dermatologist as seen by—Rostenberg, 87
practitioner toward the venereal diseases, the proper attitude of—Walbarst, 257
- Genito-urinary organs, tuberculosis of—Isaacs, 250
- Getting old, the psychology of, 400
- Glandular extracts upon the secretion of urine, action of—Ott & Scott, 79
- Glycosuria, a notable contribution to the surgery of, 242
- Goellet, the death of Dr., 282
- Goiter, the symptoms of exophthalmic, 599
and its treatment, some remarks about—Solow, 583
- Gonorrhea, treatment of chronic, 333
- Gonorrheal arthritis, the serum treatment of—Herbst, 427
conjunctivitis in an adult aborted by two per cent. nitrate of silver—Claborn, 401
infection of the urethra and bladder in the female—Goellet, 316
- Governmental study of fish cancer, 498
- Grass, keep off the, 295
- Ground squirrels of the Pacific coast, the plague infection of, 106
- Harrower, H. R., 75
- Harmful, consanguineous marriages are not, 394
- Hays, Harold, 650
- Hay fever, a contribution to the study of—Leitner, 266.
fever and asthma, relation of nasal disease to—Crane, 461
- Health, public — a forecast, administration of—Hoag, 471
athletic sports for, 6
commissioner of New York, 9
conservation, 155.
opposition to a national department of, 339
politics, must be kept out of a national department of, 156
questions, public, President Taft's attitude on, 156
the proposed national department of, 240
- Heart disease and pregnancy, 389
disease with a final word about operations and heart failure, later notes on physical exploration and treatment of—Robinson, 299
failure, later notes on physical exploration and treatment of heart disease with a final word about operations—Robinson, 299
- Heat and light stroke, prevention of all forms of, 290
- Heat cramps, 607
- He fed fevers, 56
- Hemoptysis, treatment of, 149
treatment of, 332
- Hemorrhage, post partum, 97
- Hemorrhoids, injection treatment, 334
the non-operative treatment of, 436

- Hepatic sclerosis in non-alcoholics, the frequency of, 239
- Hereditary hypoplasia, 398
- Heredity, 394
- Herpes, the treatment of, 387
- Hip, treatment of the tuberculous, 97
- Hirsutis or hypertrichosis—Geyser, 384
- Historian, the physician as, 562
- History, making, and learning it, 297
of pneumonia, its occurrence and statistical data—Lewis, 165
- Hoag, D. E. 471
- Honest, capable and clean pharmacist, 449
- Honesty is largely a matter of education, 62
- Honors, scholarships should also be, 393
- Hookworm disease, the treatment of, 602
- Hospital wards in hot weather, the cooling of, 101
- Hot weather, arterial relaxation of, 445
weather, the cooling of hospital wards in, 101
- House disinfection, attacks on, 104
- Human ills, to stamp out leprosy from—Ashmead, 89
- Hyoscine in therapeutics, 603
- Hypertrichosis or hirsutis—Geyser, 384
- Hypoplasia, hereditary, 398
- Hysterical amaurosis—Fleckenstein, 410
mutism—Neustaedter, 426
- Ignoring the alienist, 164
- Illustration, an atrocious, 606
- Immigration, movement to stop all, 160
restriction of, 609
- Imperforate anus—Drueck, 319
- Importance of the after treatment of injuries to the foot and ankle—Cilley, 323
- Increased work of the vacation season, 291
- Increase of cancer, denials of any modern, 498
of crime, the constant, 345
of suicides, 446
- Increasing consumption of sugar, 162
- Indications for removal of the middle turbinate, 489
- Indigestion of travellers, 164
- Industrial education, the demand for, 615
- Ineffectiveness of much disinfection, 104
- Infancy, the eloquence of—Kerr, 113
urticaria of—Wile, 42
- Infant mortality, high, continuance of, 291
- Infants, artificial feeding of, 337
low sugar diet for, 397
- Infantile diarrheas, the infectious nature of, 96
paralysis, 494
- Infection from laundries, money and postage stamps, 552
in leprosy, the mode of, 347
in poliomyelitis, the mode of, 103
of the ground squirrel of the Pacific coast, the plague, 106
of tonsil, results of, 488
gonorrheal, of the urethra and bladder in the female, —Goelet, 316
- Infections, segregation of all, 551
- Infectious nature of infantile diarrheas, 96
- Infective osteomyelitis, acute—Hilton, 134
- Influence on medical culture and remuneration, medical library and its—Holmes, 480
- Ingrowing nails, alum in, 437
- Injection treatment of hemorrhoids, 334
- Injuries to the foot and ankle, importance of the after treatment of—Cilley, 323
- Innocently acquired syphilis, 488
- Inquiry—Vinnedge, 487
- Insane, amebiasis in, 444
- Insanity excuse for crime, the passing of, 236
- Insomnia, the treatment of, 288
- Inspections are highly efficient, 607
- Instruction of the public along medical lines, method for—Bakatel, 14
- Intense suffering, a life of, and unrealized aims due to eyestrain—Gould, 569
- Interest in Ehrlich's "606," 552
- Interesting point in racial psychology, 561
- Interest, items of current, 154
- Intestinal diseases, certain, the place of the enema in the treatment of, 388
obstruction, acute, the diagnosis of, 598
obstruction, three points of importance in, 433
- Intra-venous medication, some results of—Somes, 656
- Investigation, white slave, 450
- Iodides, syphilis and the, 335
- Iodine, Burnham's soluble, 153
in surgery, 604
in the sterilization of the skin—Stone, 33
- Ionization and oxidation—Dickson, 45
- Irresponsibility of suicides, 445
- Is it the man or his alma mater? 503
- Issuance of statements of account, a legal obligation to the prompt, 558
- Items of current interest, 154
- It is possible to keep a ward at any temperature, 102
- Jacobia, collectanea, 233
- James, death of William, 506
- Judicial asininity, 99
- "Keep off the grass," 295
- Koch had his trials, 295
Robert, death of, 294
- Laboratories, new methods applied in research—Klein, 326
- Lactation in the Blazek united twins, 438
- Laundries, money and postage stamps, infection from, 552
- Laws, new marriage, 395
- Lay literature, the discussion of the venereal peril in, 101
- Legal obligation to the prompt issuance of statements of account, a, 558
- Leprosy from human ills, to stamp out—Ashmead, 89
problem, 9
the mode of infection in, 347
the non-contagiousness of, 346
- Lesson, the main, from San Francisco's conduct, 107
- Letter from the Philippines, "obstetrics under difficulties," 147
- Library, medical, and its influence on medical culture and remuneration—Holmes, 480
- Licenses for medical practice, 496
special for Roentgen ray operators, 345
- Lice, body, transmission of typhus by, 550
- Life of intense suffering and of unrealized aims, due to eyestrain—Gould, 569
doctors' personal or business side of—MacDonald, Jr., 509
the change of, 60
- Light stroke, and heat, prevention of all forms of, 290

- red, the damage done by, 238
 the dangers of excessive, 57
 Liquid soap, 151
 Living pig and its therapeutic application, gastric juice from the—Hepp, 522
 Long failure to recognize pellagra in America, 444
 Loss to American pharmacy and medicine, 559
 Lower classes, survival of, 291
 Low sugar diet for infants, 397
 Loyalty to the physician in charge, 58
 Lunches for school children, 608
 Maintaining a tuberculosis sanatorium, cost of, 494
 Making history and learning it, 297
 Male climacteric, 59
 Malignum, deciduoma—Judd, 268
 Manoeuvres in Massachusetts from a medical officer's point of view, the recent war—Colles, 373
 Man or his alma mater? is it, 503
 Many physicians, 557
 Marine quarantine, commercial side of, 4
 Marriage laws, new, 395
 restrictions on, 500
 Marriages, consanguineous, are not harmful, 394
 Matter of education, honesty is largely, 62
 MacDonald, J., 509
 proper age to begin, 610
 Meals, free, for poor school children, 499
 Meat, increasing cost of, 159
 Medical culture and remuneration, medical library and its influence on—Holmes, 480
 education, 442
 education in the United States and Canada, 495
 examining boards, 496
 freedom, the fallacious argument promulgated by the National League for, 339
 library and its influence on medical culture and remuneration—Holmes, 480
 missionaries in China, 97
 officer's point of view, the recent war manoeuvres in Massachusetts — Colles, 373
 politician, 157
 practice, licenses for, 496
 problem, criminality has been called a, 345
 profession, overcrowding of, 163
 profession, and public, 508
 schools, the Carnegie Foundation report on the status of American, 441
 sectarianism, decay of, 496
 side of old age pensions, 237
 society, the proper function of the, why we are what we are—Wilcox, 109
 students in the United States, 338
 students, unsatisfactory, 298
 Medication, intra-venous some results of—Somes, 656
 Medicine, and a loss to American pharmacy, 559
 how to study, 506
 need of a definition of the practice of, 497
 stains, removing, 336
 Medicines, when to take, 335
 Meningitis and its anticipation, 491
 complicating pneumonia—Hymanson, 226
 Menorrhagia in young women, treatment of—Mallett, 516
 Method of detecting bile pigment in urine, rapid, 545
 Metric advocates, tyranny of, 7
 Method for the instruction of the public along medical lines—Baketel, 14
 Methods applied in research laboratories—Klein, 326
 Middle turbinate, indications for the removal of, 489
 Migraine, treatment of, 491
 Milk, sterilization of, by ultraviolet rays, 450
 laboratories in the smaller cities, the establishment of, 396
 Misnomer, allopathy is, 342
 Mode of infection in leprosy, 347
 of infection in poliomyelitis, 103
 Modern increase of cancer, denials of any, 498
 Money, and postage stamps, and infections from laundries, 552
 Mortality statistics, the significance of, the valley of the shadow of death—Gould, 362
 Mouse theory of pneumonia—Paller, 281
 Movement to stop all immigration, 160
 Mummies, pathology of, 337
 Musical external ear, (illustrated)—O'Malley, 262
 Mutism, hysterical—Neustaedter, 426
 Myocarditis, tubercular pericarditis and—Manning, 647
 Myxo-sarcoma of the right frontal lobe, extensive degeneration in cord—Price, 586
 Nails, ingrowing, alum in, 437
 Nasal disease, relation of, to hay fever and asthma—Crane, 461
 National department of health, opposition to, 339
 department of health, politics must be kept out, 156
 department of health, the proposed, 240
 "National League for medical freedom," the fallacious argument promulgated by, 339
 Nature, return to, 347
 Need of a definition of the practice of medicine, 497
 Needed changes, a few, 293
 Neoplasms of the bladder—Berg, 306
 Neuralgia, facial, treatment of, 335
 New methods applied in research laboratories — Klein, 326
 New pure food catsup, 338
 Night sweats, camphoric acid in, 437
 Nitrate of silver, gonorrheal conjunctivitis in an adult aborted by two per cent. —Claiborne, 401
 Non-alcoholics, the frequency of hepatic sclerosis in, 239
 contagiousness of leprosy, 346
 meat diet, results of, 160
 Normal fear, and phthisiophobia, 244
 Notes on physical exploration and treatment of heat disease with a final word about operations and heart failure—Robinson, 299
 Nourishment in acute diseases, 336
 Novel cure for obesity, 439
 Nurse, trained, without judgment, 58
 Nursing the tuberculous in sanitariums, danger of, 161
 women, the elimination of, 397
 Obesity, a novel cure for, 439
 Obligation, a legal, to the prompt issuance of statements of account, 558
 Observations on the treatment of flat foot—Soule, 451
 Obstetric forceps, 231
 "Obstetrics under difficulties," letter from the Philippines, 147
 Obstruction, the diagnosis of acute intestinal, 598

- Occupation as a factor in the etiology of tuberculosis, 332
- Occurrence and statistical data, history of pneumonia—Lewis, 165
- Ocular diseases, the therapeutic value of diaphoresis in the treatment of—Brav, 83
- Old age pensions, 237
age pensions, the medical side of, 237
- Opaque clothing is becoming popularized, 289
- Operations and heart failure, later notes on physical exploration and treatment of heart disease with a final word about—Robinson, 299
abdominal, the diet after, 150
- Operators, Roentgen ray, special licenses for, 345
- Ophthalmic surgery, remark on the need of sedative treatment in—Ohly, 40
- Opposition, but now comes, 240
to a national department of health, 339
- Optic nerve affections due to etnmoiditis — Schirmer, 429
- Optometry, the commercialism of, 344
- Organization, better, of the profession, 157
- Organs, genito-urinary, tuberculosis—Isaacs, 250
- Orviletan, 618
- Osteomyelitis, acute infective—Hilton, 134
- Overcome, sleepiness should not be, 238
- Overcrowding of the medical profession, 163
- Overweights, excessive mortality of, 5
- Overwork, dangers of, 551
- Oxidation, and ionization—Dickson, 45
- Oxygen baths, 49
- Paralysis, infantile, 494
- Partisan expert, the proposed laws exclude, 399
- Passing of the insanity excuse for crime, 236
- Pastry, the various forms of, of confectionery and fruit, the vending of, 560
- Pathology of mummies, 337
of suicide, 446
- Pawlow dogs—Rose, 330
- Pellagra in America, long failure to recognize, 444
- Pensions, old age, 237
old age, the medical side of, 237
- People will soon realize the truth, 341
- Perforation, the diagnosis of typhoid, 286
- Performance of vaginal fixation, points of importance in the (illustrated)—Bandler, 121
- Pericarditis, tubercular—Manning, 647
- Peril, the venereal, in lay literature, the discussion of, 101
- Peritoneum, uterus and adnexa, tuberculosis of—Shoop, 70
- Personal or business side of a doctor's life—MacDonald, Jr., 509
- Pessary, the stem, 148
- Pharmaceutical Association, American, 448
- Pharmacist, clean, honest, capable, 449
- Pharmacopeia, the, 1
governmental assumption of, 2
next revision of, 1
United States—Remington, 47
- Pharmacy and medicine, a loss to American, 559
- Phlyctenular disease—Brown, 313
- Phthiophobia and normal fear, 244
- Physical exploration and treatment of heart disease with a final word about operations and heart failure—Robinson, 299
- Physician, a cart tail, 618
- Physician as historian, 562
in charge, loyalty to, 58
- Physicians, many, 557
- Physiological action and the standardization of digitalis—Hensel, 594
- Physostigmine—Abbott, 423
- Piffard, Dr. Henry G., 504
- Pinworms, 150
- Pipe, cigarette and cigar, 547
- Plague infection of the ground squirrels of the Pacific coast, 106
cholera, bacillary dysentery, preventive vaccinations for, 443
- Pneumonia in the aged—Wilcox, 223
in children—Kerr, 182
in children, symptomatology, complications and prognosis of—Helman, 174
camphor in, 230
diet in—Porter, 210
differential diagnosis of—Stern, 169
- meningitis complicating—Hymanson, 226
the mouse theory of—Pallier, 281
its occurrence and statistical data, history of—Lewis, 165
as a post-operative complication—Morris, 218
as a sanitary problem—Woodruff, 191
some remarks on the treatment of—Kahrs, 309
the treatment of—Aylsworth, 431
treatment of, 158
treatment of—Robinson, 191
treatment of—Butler, 200
treatment of, 229
use of vaccines in the treatment of—Stewart, 208
- Points of importance in the performance of vaginal fixation (illustrated)—Bandler, 121
- Point, an interesting, in comparative racial psychology, 561
- Poisoning, ether in cocaine, 336
- Poliomyelitis, the mode of infection in, 103
- Politics must be kept out of a national department of health, 156
- Politician, medical, 157
- Pollution, Federal control of stream, 64
- Poor school children, free meals for, 499
- Post-partum hemorrhage, 97
- Post office fight against quacks, 161
- Postage stamps, infection from laundries, and money, 552
- Post-dysenteric conditions, 102
- Potts' disease, 661
- Poverty, large family the cause of, 615
- Practice, the cystoscope in—Pinkham, 565
- Practice, medical, licenses for, 496
of medicine, need of a definition of, 497
- Practitioner, general, the dermatologist as seen by—Rostenberg, 87
general, toward the venereal diseases, the proper attitude of—Wolbarst, 257
- Pregnancy, twin, the diagnosis of, 600
and heart disease, 389
and labor of one of the Siamese twins, 438
- President, address of—Ditt-rich, 597
- President's address—Rongy, 93

- President Taft's attitude on public health questions, 156
- Press, the profession and the public, 612
- Pressure, blood, some observations on—Cowie, 632
- Prevention of all forms of heat and light stroke, 290
- Preventive vaccinations, 443
vaccinations for cholera, bacillary dysentery and plague, 443
- Prize for a "cure" for tuberculosis, 9
- Pride, professional, 555
- Problem of the chronic typhoid carrier, 444
- Professional pride, 555
- Proper function of the medical society, the, why we are what we are—Wilcox, 109
- Prostatic massage, effects of on blood pressure—Cowie, 632
- Protective power of re-vaccination, 152
- Problem, white slave, 500
- Profession, better organization of, 157
third, 495
public and medical, 508
- Professor Irving Fisher's dangerous advice, 56
- Professorships of dietetics, the demand for, 55
- Prognosis of pneumonia in children, symptomatology, complications and—Helman, 174
- Proposed laws exclude the partisan expert, national department of health, 240
- Prudery, false, 501
- Psychology of the consumptive, 549
of getting old, 400
racial, an interesting point in, 561
- Public health—a forecast—administration of—Hoag, 471
health questions, President Taft's attitude on, 156
and medical profession, 508
Public, the press, the profession and, 612
education, purpose of, 611
- Puerperal eclampsia, successful cases of—Coughlin, 141
- Pulmonary tuberculosis, campaign of the German Hospital of N. Y. City against—Breitenfeld, 34
- Pulmonary tuberculosis, treatment of, 333
- Pulse rate in appendicitis, the diagnostic importance of, 600
- Pure drugs are absolutely essential, 2
food catsup, new, 338
- Purpose of the beard, 447
- Pyelitis in pregnancy, etiology and diagnosis—McDonald, 621
- Quacks, a well known homeopathic, 619
- Quacks, postoffice fight against, 161
the, 553
- Quarantine, commercial side of marine, 4
- Question, but there is another side to the, 555
of drug dispensing, 448
the fee, 99
- Races, expansion of, 53
- Racial psychology, an interesting point in, 561
- Rapid method of detecting bile pigment in urine, 545
- Rays, ultra-violet, sterilization of milk by, 450
- Reasonably high standard, let the state licensing boards ordain, 507
- Reciprocity, 497
- Recognition, early, of uterine cancer, 490
- Recognize pellagra in America, long failure to, 444
- Re-displacement in adjusted Colles' deformity—West, 415
- Red light, the damage done by, 238
- Reform expert testimony, 399
- Relation of nasal disease to hay fever and asthma—Crane, 461
- Relation of the nose to digestion, 50
- Relaxation, arterial, of hot weather, 445
- Remarks about goitre and its treatment—Solow, 583
- Remarks on the treatment of pneumonia—Kahrs, 309
- Removal of the middle turbinate, indications for, 489
- Removing medicine stains, 336
- Report on the status of American medical schools, the Carnegie Foundation, 441
- Researches, Ehrlich's therapeutic, 399
- Research laboratories, new methods applied in—Klein, 326
- Responsibility of criminals, 236
- Restrictions on marriage, 500
- Results of a non-meat diet, 160
of contempt for sanitation, the appalling, 106
of the abuse, 396
of tonsil infection, 488
- Return to nature, 347
- Revision of the Pharmacopeia, 1
- Re-vaccination, the protective power of, 152
- Rheumatism—its symptoms and differential diagnosis—Haas, 483
- Ricketts, Dr. Howard T., the death of, 235
- Right to dispense, 447
- Ringworm, treatment of, 436
- Roentgen ray operators, special licenses for, 345
- Room at the top, there is always, 163
- Sanitarium and sanatorium, difference between—Rose, 654
- Sanatorium, tuberculosis, cost of maintaining, 494
and, difference between a sanitarium, 547
school for consumptives—Sohn, 591
- San Francisco's conduct, the main lesson from, 107
- Sanitarium and a sanatorium, difference between, 547
- Sanitariums, danger of nursing tuberculous in, 161
- Sanitary conditions of New York harbor, 52
problem, pneumonia as—Woodruff, 191
- Sanitation, the appalling results of contempt for, 106
- Sarcoma, round-celled, successful use of trypsin and amylopsin in, 162
- Saving the least desirable may be misdirecting our energies, 291
- Scholarships must be awarded for ability, 392
should also be honors, 393
the degrading abuse of, 392
- School children, defective development of, 499
children, free meals for poor, 499
for consumptives, a sanatorium—Sohn, 591
proper age to begin, 610
children who quit, 610
children, lunches for, 608
- Schools, the Carnegie Foundation report on the status of American medical, 441
- Science, Christian, 554
- Scientific study of the drunkard, 10

- Sclerosis in non-alcoholics, the frequency of hepatic, 239
- Scurvy, and beri-beri, 59
- Secretion of urine, action of glandular extracts upon—Ott & Scott, 79
- Sectarianism, decay of medical, 496
- in medicine is passing away, 343
- Sedative treatment in ophthalmic surgery, remarks on need of—Ohly, 40
- Segregation of all infections, 551
- Senile dyspepsia, 48
- Septum, deflected bony, a new operation for—Glogau, 643
- Serum treatment of gonorrheal arthritis—Herbst, 427
- Sewer system, a double, 64
- Shave or not to shave, 447
- Ships of war, the recent outbreak of smallpox on our, 393
- Siamese twins, pregnancy and labor of one of the, 438
- Significance of mortality statistics, the—the valley of the shadow of death—Gould, 362
- Simple continued fever, 298
- Sir Arthur Conan Doyle, 562
- Slave investigation, white, 450
- problem, white, 500
- Sleepiness should not be overcome, 238
- Smaller cities, the establishment of milk laboratories in, 396
- Smallpox on our ships of war, the recent outbreak of, 393
- Snap diagnoses—Fool's paradise—Kerr, 512
- Soap, liquid, 151
- Social and clinical aspects of trachoma—Brav, 406
- Society, Eastern Medical, 53
- must protect its strong and healthy, 346
- Soldiers, alcohol for, 556
- Socialism in America, 614
- demand for free medical care, 613
- large birth rate and, 614
- Soluble iodine, Burnham's, 153
- Something to be said, there is, 557
- Source of typhoid infection, 443
- Sports, athletic, for health, 6
- Spread of tuberculosis in the best climates, 160
- Squirrels of the Pacific coast, the plague infection of, 106
- Stains, medicine, removing, 336
- Standard, a reasonably high, let the state licensing boards ordain, 507
- Statistical data, history of pneumonia, its occurrence—Lewis, 165
- Statistics, the significance of mortality—the valley of the shadow of death—Gould, 362
- Status of American medical schools, the Carnegie Foundation report on, 441
- Stem pessary, 148
- Sterilization, catgut, 96
- for the criminal, unfit—Robertson, 349
- of milk by ultra-violet rays, 450
- of the skin, iodine in—Stone, 33
- St. Louis meeting of the American Medical Association, 292
- Stop all immigration, movement, 160
- Stream pollution, Federal control of, 64
- Street cleaning, 105
- Strong and healthy, society must protect these, 346
- Students in United States, medical, 338
- female, superiority of, 297
- medical, unsatisfactory, 298
- who fail to get diplomas, fate of, 297
- Study, governmental, of fish cancer, 498
- of hay fever, a contribution to—Leitner, 266
- medicine, how to, 506
- Successful use of trypsin and amylopsin in round-celled sarcoma, 162
- Sucking insects, or, dangers of biting, 550
- Suffrage, woman, 63
- Sugar, increasing consumption of, 162
- diet, low, for infants, 397
- Suggestibility of consumptives, 549
- Suicide, pathology of, 446
- Suffrage, woman, 617
- Suicides, increase of, 446
- irresponsibility of, 445
- Summer, use of colored underclothing, 289
- Sunstroke, three forms of, 290
- Superiority of female students, 297
- Superstitions of childbirth, 51
- Surgery, iodine in, 604
- of glycosuria, a notable contribution to, 242
- ophthalmic, remarks on the need of sedative treatment in—Ohly, 40
- abdominal, ten years' experience in, 489
- tetanus the Damoclean sword of, 94
- vaccine therapy in its relation to, 492
- Surgical notes, 98
- treatment of diabetes mellitus, 242
- treatment of epilepsy—Carr, 65
- Survival of the lower classes, 291
- Sweats, night, camphoric acid in, 437
- Symptomatology, complications and prognosis of pneumonia in children—Heiman, 174
- Symptoms and differential, diagnosis, rheumatism—its—Haas, 483
- of exophthalmic goiter, 599
- early, of tetanus, 599
- Syphilis and the iodides, 335
- innocently acquired, 488
- System, a double sewer, 64
- Take medicine, when to, 335
- Temperature? Is it possible to keep a ward at any, 102
- Testimony, to reform expert, 399
- Tetanus, early symptoms of, 599
- the Damoclean sword of surgery, 94
- Theory, mouse, of pneumonia—Palier, 281
- Therapeutic application, of gastric juice from the living pig—Hepp, 522
- researches, Ehrlich's, 399
- Therapeutics, hyosine in, 603
- Therapeutic value of diaphoresis in the treatment of ocular diseases—Brav, 83
- There is another side to the question, 555
- is something to be said, 557
- Third profession, 495
- Three forms of sunstroke, 290
- points of importance in intestinal obstruction, 433
- Thyroid medication, untoward effects of, and how to forego them—Stern, 11
- Tonsil infection, results of, 488
- Trachoma, the social and clinical aspects of—Brav, 406
- Trained nurse without judgment, 58

- Transmission of typhus by body lice, 550
- Travellers, indigestion of, 164
- Treatment of abortion, 49
- of burns, 435
- of cancer, the x-ray, 602
- of certain intestinal diseases, the place of the enema in, 388
- of chronic disease, success in—Harrower, 75
- of chronic gonorrhoea, 333
- of constipation, 148
- of convulsions, 491
- surgical, of diabetes mellitus, 242
- surgical, of epilepsy—Carr, 65
- of facial neuralgia, 335
- of flat foot, observations on—Soule, 451
- of gastric ulcer, 231
- of heart disease with a final word about operations and heart failure, later notes on physical exploration and—Robinson, 299
- of hemoptysis, 332
- of hemoptysis, 149
- injection, of hemorrhoids, 334
- non-operative, of hemorrhoids, 436
- of herpes, 387
- after, of injuries to the foot and ankle, importance of—Cilley, 323
- of insomnia, 288
- of migraine, 491
- of menorrhagia in young women—Mallett, 516
- of multiple abscesses, 437
- of ocular diseases, the therapeutic value of diaphoresis in—Brav, 83
- of pneumonia, 158
- of pneumonia—Robinson, 195
- of pneumonia—Butler, 200
- of pneumonia, 229
- of pneumonia—Aylsworth, 431
- of pneumonia, some remarks on—Kahrs, 309
- of pneumonia, use of vaccines in—Stewart, 208
- of pulmonary tuberculosis, 333
- of ring worm, 436
- of the hook worm disease, 602
- successful, of tuberculous fistulae, 433
- of the tuberculous hip, 97
- of typhoid fever—Strong, 533
- of varicose ulcer, 546
- of wounds, balsam Peru in, of wounds with alcohol, 545
- sedative, in ophthalmic surgery—Ohly, 40
- and some remarks about goitre—Solow, 583
- Trials, Koch had his, 295
- Trichinosis, 437
- the diagnosis of, 433
- Triumvirate, a Chinese, 439
- Tropics, alcohol in, 556
- Truth, the people will soon realize, 341
- Trypsin and amylopsin in round-celled sarcoma, successful use of, 162
- Tuberculosis, fear as the cause of, 243
- in the best climates, spread of, 160
- occupation as a factor in the etiology of, 332
- of the elbow, 434
- of the genito-urinary organs—Isaacs, 250
- of the peritoneum, uterus and adnexa—Shoop, 70
- sanatorium, cost of maintaining, 494
- pulmonary, treatment of, 333
- Tuberculous fistulae, the successful treatment of, 433
- hip, treatment of, 97
- in sanitariums, danger of nursing, 161
- Turbinate, middle, indications for the removal of, 489
- Twins, Blazeky, 492
- Twin pregnancy, the diagnosis of, 600
- Typhoid, an award of damages for, 239
- carrier, problem of the chronic, 444
- experimental, 442
- fever, diet in—Hall, 245
- fever in children, diet in, 49
- fever, treatment of—Strong, 533
- infection, source of, 443
- Typhoid perforation, the diagnosis of, 286
- Typhus, transmission of, by body lice, 550
- Tyranny, French metric, 8
- of authority, 7
- of the metric advocates, 7
- Ulcer, duodenal, diagnosis of, 47
- varicose, treatment of, 546
- Underclothing, colored, in summer, use of, 289
- United States and Canada, medical education in, 495
- medical students in, 338
- Pharmacopeia—Remington, 47
- Unreliability of consumptives, 550
- Unsatisfactory medical students, 298
- Untoward effects of thyroid medication and how to forego them—Stern, 11
- Unvaccinated, danger from the, 292
- Unwashed fruit, 348
- Urethra and bladder in the female, gonorrheal infection of—Goelet, 316
- Urine, action of glandular extracts upon the secretion of—Ott & Scott, 79
- rapid method of detecting bile pigment in, 545
- Urticaria of infancy—Wile, 42
- Uterine cancer, early diagnosis of, 542
- cancer, early recognition of, 490
- Uterus and adnexa, and tuberculosis of the peritoneum—Shoop, 70
- Vacation season, increased work of, 291
- Vaccination of public school pupils is declared unconstitutional in California, 292
- Vaccinations, preventive, for cholera, bacillary dysentery and plague, 443
- preventive, 442
- Vaccines in the treatment of pneumonia, use of—Stewart, 208
- Vaccine therapy in its relation to surgery, 492
- Vademecum in German and English, 659
- Vaginal fixation, some points of importance in the performance of, (illustrated)—Bandler, 121
- Valley of the shadow of death, the—the significance of mortality statistics—Gould, 362
- Varicose ulcer, treatment of, 546
- Vending of fruit, confectionery and the various forms of pastry, 560
- Veneral diseases, the proper attitude of the general practitioner towards—Wolbarst, 257
- peril in lay literature, the discussion of, 101
- Voters, qualifications for, 609
- Ward at any temperature? is it possible to keep, 102
- Wards in hot weather, the cooling of hospital, 101

- War manoeuvres, recent, in
Massachusetts from a
medical officer's point of
view—Colles, 373
- Waste of city water, 343
- Water, the waste of city, 343
- Weather, hot, the cooling of
hospital wards in, 101
- "What's the use?" 241
- When to take medicines, 335
- White slave investigation, 450
slave problem, 500
- Whooping cough, etiology of,
287
- Why we are what we are—
the proper function of
the medical society—Wil-
cox, 109
- Wisdom from the mouth of
babes, 107
- Woman suffrage, 63
- Woman suffrage, 617
another notable gone, 617
- Women, the elimination of
nursing, 397
- young, treatment of menor-
rhagia in—Mallett, 516
- Wounds, treatment of, balsam
Peru in the,
treatment of, with alcohol,
545
- X-ray treatment of cancer,
602
- Yorkville Medical Society, 604,
662
- Young women, treatment of
menorrhagia in—Mallett,
515



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The Pharmacopeia is certainly receiving its full share of criticism these days and nearly every writer seems obsessed with the desire to "knock"—if we may be pardoned the expression. While granting freely that the last revision was open to certain criticisms, we feel that it was a vast improvement over its predecessors, and all in all a credit to those intrusted with the enormous amount of detail incident to its compilation. A work of such character, representing data from so many sources, presents difficulties that the casual critic can at best only partly comprehend. Deficiencies and weaknesses not evident in the making, become all too apparent in the work viewed and examined as a whole. Perfection might have been hoped for, but should hardly have been expected, especially when it is admitted, as it certainly must be, that practically no general interest was shown in the work of the last Convention. Its duties were done, however, and the committee charged with the completion and culmination of the concrete result brought forth a volume that was far superior in every way to those preceding it.

When, in all fairness, we consider the difficulties that were encountered, the labor involved, the burden imposed on a comparatively few men without hope of fee or reward, the indifference shown generally, and realize, as every intelligent person must that neither pharmacology nor therapeutics had advanced sufficiently to permit the most

desirable results, we can only commend the volume that was produced. The U. S. Pharmacopeia as it stands may be a long way from perfection, but it far surpasses any former revision as a fairly accurate and reliable index of the pharmacological and chemical knowledge up to the time of its production. That very great progress has since been made, may give more promise for our next Pharmacopeia, but in no wise reflects on the work that gave us the present one.

The charges of graft, incompetency and ignorance that have been hurled at the last Revision Committee are as false as they are unworthy of notice. They are amply refuted in the volume produced, and in the lives and everyday work of the men who formed the Committee. We are extending no compliments, simply giving just due to men who were big enough, brave enough and earnest enough to carry through an undertaking that meant infinite labor, no gain or fame, and—alas, unlimited criticisms and accusations. In truth, the price of duty sometimes seems high!

The next Revision of the Pharmacopeia will be accomplished under much more favorable conditions. During the past decade pharmacology has made more substantial progress than ever before. Chemistry has gone rapidly forward and therapeutic knowledge has been placed on a scientific foundation only recently possible.

A live interest in the Pharmacopeia has developed, due somewhat to its adoption as a standard in the Food and Drug Law, and a better realization of the place it should fill has gradually extended throughout medical, chemical and pharmaceutical circles. All this augurs well and enthusiasm is indeed warranted.

But a warning should be sounded. Under the most favorable conditions the Pharmacopeia must have its limitations. It has been heralded far and wide as the ultimate cure of every therapeutic as well as pharmacologic ill. But to those who will calmly and sensibly consider the proposition all this is ridiculous. The Pharmacopeia has a definite place, a most important place in medicine and all the collateral sciences. That place is to stand as the national official standard of the quality, nomenclature, preparations, sources, composition, solubility, assay and established dosage of the drugs of the period. It can never be complete enough to serve as a working manual of pharmacology or therapeutics. As a work of reference, however, giving established data concerning the principal drugs of the period, selected for their generally accepted utility by a representative body of pharmacologists, chemists, teachers and clinicians, the forthcoming revision of the Pharmacopeia, like its predecessors, will fill its place to the credit of the earnest, honorable men who compile it and the benefit of those who have occasion to use it.

Governmental assumption of the Pharmacopeia would be a disaster, and yet this is undoubtedly the intent of the bill recently introduced into Congress by the Hon. H. M. Coudrey. Many of our contemporaries have referred to the frightful language of this bill, which is indeed fearfully and

wonderfully constructed with an affront to good English in almost every line. These are remediable, however, and only call for passing reference. The avowed purpose of the bill stamps it as both impractical and ridiculous. To call for the standardization of every remedy used for man or animal is not only beyond all possibility of chemistry, since the science has only progressed to a point where a small proportion of drugs can be standardized, but would mean a work of years and results so voluminous that they would be practically useless.

As far as Government control of the Pharmacopeia is concerned we believe that it would prove dangerous from every standpoint. Once let political machination become a factor in Pharmacopeial revision and the work will be destroyed forever. Under present conditions there is a scientific *esprit du corps* operative among the gentlemen intrusted with the enterprise, that in our mind constitutes one of its most valuable assets.

It is extremely doubtful if the Coudrey Bill will receive any serious consideration for it is so patently weak and untimely that few Congressmen will care to support it—at least in its present form.

Pure drugs are absolutely essential and every effort should be utilized to secure them. Our Boards of Health—city and state—are doing a splendid work to this end, and we do not hesitate to venture the belief that our drugs are of a higher quality and freer from adulteration today, as a result of these activities and the execution of the Food and Drug Law, than ever before. The Custom authorities carefully scrutinize and test all imported drugs and therefore do much to assure their purity and quality, while commercial competition is another

factor constantly tending to raise and maintain proper domestic standards.

The Bureau of Chemistry at Washington has shown its possibilities in this direction, and if the much talked of plan of placing all of the public health agencies under one organized bureau materializes, as it bids fair to, there will be still further opportunity for investigating drugs.

When all is considered, therefore, it would seem that a more systematic supervision, inspection and study of drugs should be provided for by national law, and a bureau established solely for this work. A weekly or monthly bulletin should be issued giving the results of the investigations. Such a bureau would supply the present great need for systematic chemical and pharmacological research, and its regular publications would fill in the time between Pharmacopeial Revisions with needed data. The resources of such a bureau should be at the service of the Revision Committee of the Pharmacopeia and its chief and other officers should be permanent members of the Revision Committee.

It is recognized that these suggestions are rather indefinite, but it must be evident to all interested that a decennial revision of the Pharmacopeia leaves a barren period between each issue. It has been suggested that the Revision Committee publish an annual supplement or addendum. Under present conditions the work required to properly prepare and issue such a supplement would be prohibitive, to say nothing of the cost. The plan to have a government bureau constantly carrying on a constructive work in the investigation of drugs meets every demand of current needs, and at the same time provides for the building up of an enormous amount of material subject to final disposition by each Decennial

Convention. The publication of such material in serial bulletins would allow general scrutiny and testing before consideration by the Convention or Revision Committee.

Some such plan would seem to be needed if we are to progress in our knowledge of drugs. The Pharmacopeia can serve us within circumscribed limits, but we should not make it a fetish to blindly worship, and in our devotion and enthusiasm lose our sense of proportion. Valuable as it is, and as it especially will be after the next revision, it does not seem that anyone can deny the supplemental value of contemporary drug investigations by a properly organized government bureau.

In the interests of true progress in pharmacology and therapeutics, we earnestly hope to see some such plan soon materialize.

Attacks upon the fomites theory of contagion are becoming more and more frequent of recent years. Indeed every new discovery in etiology generally shatters some old hypothesis which was long supposed to account for the facts. Every theory does account for all known facts—it is only the unknown which are not included, and it is expected that as soon as discovered they are bound to change prior generalizations. Until within a decade or so, the evidence indicated that contagion adhered to clothing and merchandise and was thus carried from the sick to the well, so we naturally disinfected everything which had come in contact with diseased persons and more or less neglected the real carriers. In the case of yellow fever we even destroyed millions of dollars' worth of inert property and let the infected mosquito go free. When Chapin of Rhode Island stated that diphtheria was transmitted directly from patients or convales-

cents and not things, he was viciously attacked in the Section of Hygiene of the American Medical Association, but he showed that the bacilli could not live very long on dried surfaces, and that the walls of the sick room were sterile by the time we got around to disinfect them. So he kept the sick from spreading the disease and stopped the waste of disinfectants and had better results than when he attacked the dead germs. Similarly until we learned that the flea transmitted plague bacilli which could not live long outside of a host, we wasted millions of dollars in disinfecting and destroying the supposed carriers of the fomites. Now the contagiousness of typhoid is taking our minds from the fomites theory, although we know that water and milk and nutrient stuffs generally can keep the bacilli alive and multiply them. Drying is so quickly fatal to many organisms that we have long ceased to consider dry stuffs as carriers and the causes of cholera, glanders, gonorrhea, syphilis and many other diseases.

The commercial side of marine quarantine is thus vastly changed, for we can now admit harmless goods and keep out the living organisms in the bodies of the sick, and trade may be little affected or not at all. This has been the policy of Great Britain for a long time, because interference with trade means prompt starvation. The shotgun quarantine of self-supporting communities would be suicidal. We in America are quickly approaching the condition of England. It will soon be disastrous to interfere with commerce, so that it behooves us to look into the quarantine methods, with a view of passing in everything harmless and only detaining the living organisms. To this end, all the old evidence must be

reconsidered. In small-pox, for instance, though it is well established that the germs may live some little while on the clothing of a patient, yet they die in time and there is a suspicion now that many of the cases formerly believed to have been contracted from such articles a long time after convalescence, were really caught from a newly imported fresh case. As far as known, it is impossible or rather very difficult, for a doctor to carry the germs from merely being in the vicinity of the sick, so there is a tendency to consider contacts harmless if they are vaccinated. The greatest shock is the increasing doubt that scarlet fever organisms are as long lived and resistant as we believed five years ago. There is much evidence that they are pure parasites and like the protozoa in general, are eventually killed by drying, even if skin scales can transport them through the air for a short distance, and that the old stories of garments having retained the virulence for several years are mere coincidences in which the real source of infection was an unrecognized infected person. The case for the fomites must then be reopened for reconsideration, though it is a matter of common sense to go slow. Nevertheless, the theory is on the defensive and must show cause why it should not be abandoned. Its advocates must prove that in the alleged cases, no other sources of infection were possible.

Accuracy of disinfection is the modern necessity, for the public will not tolerate needless expenses. Efficiency also is impossible unless we shoot straight. We cannot kill the enemy unless we know where he is, and it is foolish to shoot dead soldiers. For these reasons there is a world wide movement to simplify all methods of quar-

antine and disinfection to avoid expense and assist trade. But we must not allow traders to have everything their way, as they are known by past experience to be utterly oblivious of the deaths they cause, provided money pours in. It would seem wisest to consider fomites guilty until we prove they are not, though as before stated the burden of proof is really on the other side. The culprit has been found guilty and that will be his legal status until new evidence is produced, and that means a long time. Nevertheless the whole trend of recent evidence seems to be in the direction of proving that all diseases are transmitted more or less directly from an infected living being, man or beast, and not indirectly after a long interval. Living infected carriers are the ones to be quarantined and disinfected, not their money, or old clothes or foods. There will be an irresistible outcry against sanitarians, if it is found out that they have needlessly ruined the harmless property of citizens. Besides all this, the old methods are too often ridiculously inefficient even if fomites existed. Most of them merely create bad smells which compel us to let in the light and air to kill the germs.

The dangers of modern football are so well known and have been denounced so often—it is rather surprising all college authorities do not insist upon modification of the rules. The dreadful record of injuries a few years ago did seem to have some effect in the way of making it less dangerous, but the death of Cadet Byrne of West Point shows that the reactionaries have been quietly at work again, and it is now necessary to keep up the campaign more vigorously even if the game has to be completely eliminated from the curriculum. The ab-

surd cry that reformers are molly-coddles does not have the slightest effect beyond showing the desperate character of the efforts to retain these brutal exhibitions of modern gladiators. Most amazing of all is the manner in which football fanatics ignore the real medical objection—the game gives athletic training to the only students who do not need it, and relegates to the bleachers the only men who are desperately in need of games which will develop their feeble physiques. The weaklings must be content with dry calisthenics from which the virtue of sport has been eliminated. Youthful development is based on the stimulus of rivalry of skin and there can be no rivalry where mere beef is the only qualification or at least the basic one. Exhibition games are necessary because rivalry is sterile if its successes are not publicly witnessed, and the ideal sports are those in which the frail men will have as much chance to show skill as the giants.

The excessive mortality of overweights has been published by life insurance statisticians and the phenomenon must be considered in football discussions. It is now a proved fact that the men who are barred from the game are the ones who live the longest, and though mere length of life is no criterion of its usefulness, yet it is a fair assumption that the longest-lived are the most vigorous and therefore the best brain workers. The colleges are then spending the most money on the students who will give the least returns. Every now and then some ingenious fellow publishes statistics showing that students able to take part in sports outlive those too defective to take any part at all, as though that needed numerical proof. The new statistics show that the healthy underweights

excluded from football are fitter for survival in America than the overweights of the teams. Not infrequently also these frail men are possessed of wonderful brains, and we find the astonishing situation of college sports giving precedence to mere muscular development. This perversion has gone far enough. If the college faculties are so powerless that they cannot reform the rules so as to make it safe for the frailer men to take part, let the wretched business be ended once and for all. Pandering to a public taste for exhibitions of dangerous muscular contests is on a par with the bull fights of Mexico—worse probably. The detested prize fights are less dangerous, so let us have them—or even gladiators paid to kill each other as in the days of Rome—and reserve college contests for exhibitions of skill which require trained brains even if the body be weak.

Athletic sports for health was the keynote of the discussion at the 1909 meeting of the British Medical Association. It was acknowledged that accidents will happen to boys from the moment they begin to toddle and that we must expect minor injuries even in effeminate games, but it was brought out that some serious injuries and deaths have resulted from such foolish mistakes as great exertion immediately after a full meal. It was also shown that boys of nine—or nineteen—must not be permitted to make the efforts of maturity, particularly prolonged exertion. Boyhood seems to be the time for short periods of activity followed by more or less rest, and boys will be boys if we only let them. Yet their games must be regulated, for even a colt will run itself to death if the stimulus is sufficient, and it has been suggested that each school should have its “games-master”—a man of the social stand-

ing of the boys he develops. The most satisfactory outcome of the discussion was the revelation that the medical profession is at last taking an active interest and is solidly on the side of athletic sports combined with regulated exercises for the defective, with the sole end of making the boys into better men than they would otherwise be if they were guided by their own instincts. It enhances scholarship and is therefore a vital matter for the faculties themselves. AMERICAN MEDICINE has always taken this stand, and it is extremely gratifying to find our British cousins getting into line.

Sterilization of criminals was discussed at the Prison Congress in Seattle in August, 1909, and there was a general agreement as to the wisdom and necessity of preventing the reproduction of these social parasites in this way. All the same it is rather surprising as it is well known that criminals do not raise many offspring. The prison population is mostly recruited from respectable families—even the sons of clergymen sometimes go wrong. There are a few instances of degenerate families, but no one would have dreamed of sterilizing the ancestor who produced the first generation of the bad line. The proper thing to do, is to find out exactly who were the parents and grandparents of the present day criminals and what happened to prevent normal heredity. Then it might be found that there are non-criminal parents who should have been sterilized as unfit for procreation. In addition to all this, when criminals are given a normal environment and their offspring, if they have any, are properly reared, return to the normal is the rule, as in every other species of living thing. The English criminals exiled to Virginia and

Australia have produced a fine race, through this law. In every way we look at it, sterilization seems illogical and it is amazing that it is experiencing such a vogue.

The tyranny of authority comes up for condemnation every little while, although no one ever explains why it is a normal consequence of organization. Grouping occurs simply because the units are like-minded and must have a strong class feeling to keep the group in existence, whether it be clan, tribe, nation or scientific society. Outsiders must be attacked or they would destroy the group. Clannishness has therefore always been the basis of survival and he who is not clannish is a traitor to be cast out. This feeling pervades all groupings and fully explains the bitter persecutions of the innovator whose work will change the character of the group. One would suppose that university men would rise above such actions yet the history of science shows that, being human, they act like all other men in organizations. That is why they have always been bitter in their opposition to outsiders like Darwin, and continue in opposition until Darwinians creep into the organism. The theories of a "professor" are given respectful attention no matter how absurd they may be. The last exhibition of clannishness to disgrace science is the attack upon the astronomer Lowell, who has done so much splendid work. The columns of "Science" recently gave space to a typical sneering article by one Professor Blackwelder, of ominous name, and as this periodical is the organ of the Association for the Advancement of Science, many of whose members are "outsiders," it is liable to hamper their work if it makes many such unhappy slips. Opposition to Lowell's views is perfectly

proper but the tone of the above article was undignified, childish and jealous to the verge of vituperation. The whole controversy was and is regrettable.

The tyranny of the metric advocates is another instance of persecution by entrenched authority. It has been pointed out a thousand times that the popular measures were evolved for practical use by the common people themselves, who must have units easily divisible by two or three. Scientists evolved another system far more convenient to them and then have tried to force it on people who cannot use it. Few uneducated peasants are able to divide a measure into ten parts and where the metric system has been imposed on them, they have immediately devised half, quarter and eight units like our commercial divisions of the dollar and dime. In certain parts of Europe, the peasants still use their ages old measures where the metric system is the only legal one. They cannot do otherwise and the attempt to force them to the impossible shows gross ignorance of psychology on the part of the metric advocates. Thousands of years hence our western roads will still be a mile apart even if the sign posts mark the distances in decimals of a kilometer. It would be just as sensible for the common people to rise in their wrath and pass laws making it illegal to use in laboratory work any other than their practical measures—indeed more sensible for the scientist can do it though inconveniently, whereas the peasant cannot use metric measures at all. These are the reasons why physicians in contact with the less intelligent are compelled to use the measures most easily comprehended even if the prescription is written in decimals. We doubt, therefore, whether the metric

system will ever come into general use in medical practice or any other matter connected with the lowly.

French metric tyranny is now beginning to be actually harmful. The laws have been made so strict that manufacturers are forbidden to use foreign measures or the old native ones. In Lyons several men have been fined for making goods on non-metric measures, though intended for export to countries where the metric goods will not sell. Tyranny of science could not be carried further, unless all manufacturers are jailed for trying to increase French prosperity. We may, therefore, expect to see a marked reaction as soon as the injury is fully realized, and the metric advocates may prepare for the coming storm. It might as well be acknowledged at once that though the metric system is indispensable for laboratory work or international science, if such an expression is allowable, it is beyond the capacity of the common herd who have evolved more convenient ways of measuring and will not use the scientific because unable. A century of effort has failed to make people do the impossible and there is no hope of future success. The medical profession must realize that in their scientific work they must use the metric system, but in their contact with the sick they must use measures understood, and never use a fraction more complex than a half. We regret the persistent attempts to force congress to do what has failed in Europe.

The Early case seems to have again taken on the aspects of a tragedy. The special committee appointed by the Society of

Medical Jurisprudence to examine this unfortunate man and free him once and for all from the suspicion of leprosy, reported instead that they had found positive symptoms of the disease and were able to demonstrate lepra bacilli in some of his skin lesions. Dr. Duncan H. Buckley, who has championed Early throughout, denying most strenuously that the man had leprosy, refused to accept the committee's report and by consent of the meeting had final acceptance of their findings postponed for a month. This was just and proper, for as long as a single doubt exists as to this poor man's actual condition every opportunity should be given to him and his friends to disprove the diagnosis of leprosy.

It begins to look, however, as though our good friend, Dr. Buckley, has been mistaken. He need make no apologies, for "to err is human." Dr. Buckley's reputation as one of the country's leading dermatologists is too secure, and too great credit is due him for his broad humanity in this most interesting though unfortunate affair, to allow a single unkind thought to be entertained against his position in the controversy. Something ought to be said, though, concerning the Washington authorities, notably Dr. Woodward, the Health Officer of the District. This capable physician, one of the leading sanitarians of the country, has been attacked most viciously for his supposed heartlessness in placing Early under strict quarantine. He is too big a man to gloat over apparent vindication of his course, for he simply did his duty as he saw it. At the same time there is some apology due to him and the other Washington physicians who would have been subject to something worse than criticism if they had done any different than they did.

The leprosy problem seems to be farther than ever from solution. Granting as every humane person must that nothing gleaned from recent study and investigation of this disease justifies the abject fears that once led to the most heartless treatment of patients thus afflicted, we must be as ready to admit that our lack of knowledge of the manner of infection most assuredly does not warrant allowing lepers to mix at will with those uninfected. In other words, the *modus operandi* of a leprous infection is unknown; such being the case, relaxation of a single essential precaution would not only be imprudent—it would be criminal. Until the manner of infection is definitely known, society must maintain a defense that is effective in every direction, even though unnecessary in all but one. Mankind cannot afford to make any concessions to uncertainty.

Therefore, when our health authorities seem unduly strict in establishing quarantine against leprosy—or any other contagious disease, for that matter—it should occasion satisfaction rather than suspicion. Common sense dictates that the margin of safety should be too wide rather than too narrow in the practical operation of preventive medicine.

The new Health Commissioner of New York City, Dr. Ernest J. Lederle, is one of Mayor Gaynor's appointments that will give uniform satisfaction. It is true that we hoped the mayor would continue Dr. Darlington in office, for he has done a splendid work for New York City, and the Health Commissionership should be one position removed from the flesh pots of politics. Clean, efficient service such as Dr. Darlington has given should mean a continuance in office, in the interests of the

public rather than as a reward of merit. But since our worthy executive saw fit to make a change, we are glad indeed that he chose a man so well qualified in every respect as Dr. Lederle. This gentleman once before directed the health matters of New York City and made a conspicuous success. As a scientist he stands high and his executive ability has been amply shown in many fields of activity. His former experience will be helpful and it may be confidently expected that the good work of his own and his predecessor's administration will not only be continued but amplified in every possible way. The residents of New York are fortunate, since a change in the Health Commissionership has been made, that the office has passed into such capable hands. Although the average citizen does not know it, and passes to and fro among his daily activities totally oblivious of the vigilance that the Health Department is constantly exerting in his behalf, the Health Commissioner is one of the most important officers of the city government. Everything depends on his knowledge, administrative ability and common sense. Dr. Lederle will not be found lacking in any of these qualifications and though not a medical graduate he will have the enthusiastic support and cooperation of every New York physician.

A prize for a "cure" for tuberculosis has been provided for by an alumnus of Yale, according to an announcement from that institution. While the humane spirit that led to the donation of \$100,000 for this purpose must be commended, the careful student of the tuberculosis problem can hardly fail to regret the false or mistaken impressions liable to result from the language and general terms of the prize of-

fer. All that we know to-day about the pathology of tuberculosis, points conclusively to the fact that any arrest of the disease is accomplished entirely through the activity and competency of bodily forces. To speak of a "cure" for tuberculosis is therefore anomalous and liable, as in the present instance, to perpetuate erroneous ideas in the minds of the afflicted concerning "consumption remedies." It is entirely probable that a treatment or some special agency will some day be discovered that will confer on the human body specific power of arresting and overcoming a tuberculous infection. But even then the cooperation of open air, good food and hygienic living will be just as essential, and so we get right back again to fundamental principles. As a matter of fact, there are a goodly number of remedies that already have been found more or less effective in connection with outdoor living and proper feeding in arresting tuberculosis. But they in no sense are "cures" for consumption, and no intelligent physician considers them as such.

It is to be hoped that the distinguished physicians in charge, whose names at once assure proper handling of the matter, will at an early date make an announcement that will coincide with established facts, and thus go far toward correcting mistaken ideas on the medicinal "cure" of tuberculosis. Too much time, effort and money have been expended in proving the essential place of sanitation, ventilation and hygiene in the arrest and prevention of tuberculosis, and the results have been too conclusive, to have these agencies jeopardized in the slightest by false ideas as to the part played, or liable to be played, by any specific remedy. The principal benefit likely to result, in our opinion, from this prize proposition, comes from the state-

ment that pending disposition of the prize, the income will be used to investigate remedies that come to the attention of the trustees or members of the advisory board. A vast amount of good can indeed be done by exposing the fake "cures," and giving to the public correct information concerning the treatment of tuberculosis.

The scientific study of the drunkard

is the only way of ending the present deplorable differences of opinion. There is an increasing body of thinkers who are advocating segregation of these sick people so that protection can be afforded society and the sufferers. Cure is attainable in only a small percentage by present methods of tiding over a debauch. Something must be found to take the place of alcohol, and means must be discovered to so improve the nervous system that there will never arise that irresistible demand for narcosis. We strongly commend the present plan of confining the chronic drunkard under medical care takers. There are many suggestions worthy of trial—an increase of the sugar in the diet is said to furnish energy to relieve fatigue. It has proved beneficial with soldiers in campaign and with laborers, and it has been seriously advocated in the craving for alcohol. Surely it is worth investigating. There is such a demand for the exclusion of intoxicated men from the highways, particularly teamsters and chauffeurs, that law makers cannot ignore it much longer. The joy-rider or drunken teamster is causing so many deaths, that it is not at all unlikely that arrests for habitual drunkenness in any calling will result in confinement until cured, but if relapses occur, then the safety of society demands confinement for life. The time has long gone by, when the drunkard is considered an enemy to himself alone.

ORIGINAL ARTICLES.**UNTOWARD EFFECTS OF THYROID
MEDICATION AND HOW TO
FOREGO THEM.¹**

BY

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A decade or so ago, preparations of the thyroid gland were much in demand; within the last few years the gross of physicians, at least in this country, have abandoned thyroid medication to a great extent. To what causes may this change be assigned? Are the preparations of the thyroid gland of so little value in the treatment of disease? Or are they so expensive that the practitioner had to forego their use? There are mainly two reasons which account for the relative abandonment of thyroid therapy. These are (1) the supposed or actual impurity of the thyroid preparations on the market; and (2) the untoward effects which thyroid administration has called forth in a great number of patients.

On this occasion I do not wish to enter into a discussion concerning the purity of the commercial thyroid products, neither do I wish to dwell at length on the chemical composition of thyroid extract and other preparations of the gland, nor upon the physiological behavior when these are exhibited in the healthy and diseased human organism. I shall briefly discuss a few points connected with the purely clinical side of thyroid administration.

The first and most thorough setback which thyroid therapy has received was undoubtedly brought about by the indiscriminate use of the thyroid preparations

in the treatment of obesity, and by the subsequent widespread fad of self treatment with the products of this gland to effect rapid reduction of body weight. In the wake of the indiscriminate use of thyroid by physicians, especially the tablets of thyroid extract, and of self treatment by patients with this preparation, there often occurred cases of digestive disturbance in varying degree, extreme nervousness, jactitation, general depression and other more or less severe manifestations of intoxication. Small wonder therefore, that the profession to be on the safe side abandoned thyroid therapy in a great measure.

Aberrant effects of thyroid medication, apart from an eventual impurity of the preparation employed, may be due (a) to the dose in which the product is administered; (b) to the constitutional characteristics of the patient. The first eventuality is a very important factor in the production of untoward phenomena. Not infrequently the physician advised a patient to take from three to four grammes (45 to 60 grains) of thyroid extract during the day, and often a patient under self treatment ingested twice or three times that amount. I remember that one patient, an actress of great embonpoint, took more than six thousand tablets of five grains each of a well known brand during the period of eight or nine months. But, strange to say, this lady seemed to be none the worse for her experience, and her weight in spite of dieting and the thyroid ingestion had not decreased more than from twelve to fourteen pounds. The more we study the action of a drug the better we will know to what cases it is particularly adapted, and in what amounts it ought to be administered. True enough, good results, especially in obesity, will often be attained by massive doses of thyroid

¹ Read before the Manhattan Medical Society, November 26th, 1909.

extract, but the rapid reduction invariably ensues at the expense of body albumin, general resistance and vitality. A rapid disintegration of body albumin is, as a rule, accompanied by a chain of more or less pathological phenomena. Aside from the various untoward symptoms recounted heretofore, there are three concomitants of this pathological occurrence, viz., irregular heart action, glycosuria and albuminuria. If the dose of the thyroid extract be small enough, none of these manifestations may occur. As a matter of fact, however, body reduction by means of thyroid extract medication will not take place without giving rise at some time or other to a brief or protracted period of arrhythmia, or glucose or albumin excretion. Thyroid extract in doses large enough to effect body reduction is never a safe agent. While the thyroid in small amounts may not be a poison for the body albumin, large doses of the preparation undoubtedly exert toxic effects pre-eminently on the protoplasmatic constituents of the organism.

Different individuals are differently affected by the thyroid preparations. In a certain class of patients the ingestion of thyroid extract is rapidly followed by loss of body-weight and general improvement; in another class, there ensues loss of body weight with concomitant depression and toxic symptoms, and in a third class there occurs no, or very little loss of body weight and no, or but very vague toxic phenomena. Individuals of the first class, those so favorably influenced by thyroid therapy, exhibit illy-pronounced myxedematous manifestations as inelasticity and doughiness of skin and subcutaneous tissues, periodical falling out of hair, markedly small thyroid gland, etc. in probably every instance.

Although many individuals bear well the administration of thyroid preparations, they cannot always be sought out before treatment is started. It is, therefore, more prudent to prescribe very small doses of the drug in every instance when its administration is instituted.

Heretofore, thyroid therapy has found but limited employment. For a number of years its use has been practically confined to the treatment of obesity, myxedema, cretinism and related conditions. However, thyroid preparations have an active beneficial effect upon a variety of other pathological affections and states, such as certain forms of rachitis, infantile marasmus, migraine, epilepsy, eclampsia, certain types of chronic rheumatism and gout, continued high blood pressure, optic atrophy resulting from hypertrophy of the pituitary body, hemophilia, high fever, pruritus, psoriasis, etc.

Preparations of thyroid would find much more frequent employment in the hands of the general practitioner if he knew in what specific instances he could use them, and if he were assured that their depressing and toxic effects could be materially reduced.

The physician must also understand that the massive doses of the thyroid preparations originally recommended are only indicated in certain acute affections, and for but very brief periods at a time in the course of chronic pathological states. For the successful coping with nearly every phase of the chronic conditions in which there exists thyroid insufficiency, the employment of small doses will do effective work in the preponderating number of instances.

Excepting the small doses, do we possess any other means to protect the organism

against the deleterious effects of thyroid medication?

About fifteen years ago I first observed that arsenic exerts a specific influence upon the activity of thyroid.¹ Patients who took an arsenical and thyroid preparation at the same time never complained of untoward symptoms, while those who were treated with thyroid preparations alone occasionally exhibited such symptoms as I have mentioned. So pronounced was the modifying power of arsenic that in the course of time I never prescribed thyroid preparations without adding arsenic in some form. My observations have been confirmed by those of Bédart and Marbille (*Compt. rend. de la Société biol. Vol. 50, p. 566*), who did not find palpitation, tremor, etc., following the administration of thyroid if Fowler's solution was given simultaneously.

In a communication of Gautier (*sur l'existence normale d'arsenic chez les animaux et sa localisation dans certains organs, Compt. rend. Vol. 129, p. 929, etc.*), which only came to my attention a short time ago, I again find a certain confirmation of my clinical experience. It is a fact that arsenic and iodine (iodine of the thyroid) are frequently encountered associated together in nature. Gautier found arsenic in the fresh thyroid gland of the dog, the hog (0.67 mg. per kilogram), the wether (0.5 mg.) and in man (7.9 mg.), and he is of the opinion that the arsenic is contained in the nuclein. Again, the beneficial influence of arsenic in Graves' disease points to its connection with the thyroid gland. If we now consider that the thyroid of man contains 7.9 mg. arsenic while that of the castrated ram exhibits but 0.5 mg. per

kilogram, we understand that the thyroid preparations on the market, which are derived from sheep, must be deficient in that element, the presence of which in larger amounts not only enhances the efficiency of the thyroid but also exerts a controlling influence upon its total activity. In other words, the *human thyroid contains about sixteen times the amount of arsenic than does that of the sheep which we employ for medication*. It stands therefore to reason that the addition of a certain amount of arsenic to the thyroid preparation appears to be essential from the physiological as well as the clinical viewpoint.

Dimethyl arsenic acid (cacodylic acid) stimulates nutrition and possesses all the beneficial properties of arsenic without giving rise to its toxic effects. Instead of arsenious acid I have used for some time the dimethyl arsenic acid as a modifier of thyroid action.

As for the treatment of chronic conditions thyroid medication has to be continued for protracted periods, and as in nearly every one of the pertaining instances the heart's action leaves a good deal to be desired, I generally add one of the cardiac stimulants to the thyroid-arsenic combination. My studies of adonidin, a glucoside of adonis vernalis,¹ convinced me that it is the safest and best of all the general heart tonics. *In rapidity of action* adonidin surpasses by far other heart remedies, such as digitalis, digitalin, digitoxin, caffeine, sparteine sulphate, strophanthus, convallaria majalis and convallamarin. *In certainty of action* it surpasses by far caffeine, sparteine sulphate, convallamarin, strophanthus and digitalis or its glucosides.

¹Heinrich Stern—Adonidin, Physiologic and Medicinal Properties. An essay to which was awarded the first prize in the literary contest conducted by Merck's Archives. Merck's Archives, April and May, 1900.

¹Heinrich Stern—On the Treatment of Obesity, Jour. A. M. A., Feb. 15th, 1902, and other publications.

In permanency of action, although it does not call forth any cumulative effects, adonidin surpasses nitroglycerin, caffeine, convallamarin, sparteine sulphate, digitalis, digitalin and digitoxin. Of late, Huchard (*Jour. de Médecine de Paris*, Sept. 18, 1909), seven and a half years after I first published the formula of the arsenic acid—thyroid—adonidin combination—concluded that thyroid extract should be combined with caffeine and sparteine sulphate in order to forego deleterious after effects.

This is a partial acknowledgment of my work along these lines, but I maintain that neither caffeine nor sparteine sulphate are drugs which, in point of efficacy can be compared with adonidin. They possess, however, the advantage of being much cheaper than the adonidin.

The thyroid combination which I prescribe at the present day is as follows:

Sodium cacodylate, 0.5 milligram=
1-200 gr.; adonidin, 2 milligrams=1-30
gr.; thyroid gland, dry powder, 5 centigrams=1 gr.; M. p. compressed tablet No. 1.

Fresh adonidin cannot always be obtained, its price is almost prohibitive. Caffeine may be substituted for it in doses of one centigram ($\frac{1}{100}$ gr.). However, it must be remembered that caffeine is a substitute only, and whenever adonidin can be procured, and the patient is able to pay for it, it should be given decided preference.

In conclusion I venture to say that thyroid therapy will receive a new stimulus as soon as the medical profession appreciates the fact that the addition to the thyroid of proper amounts of arsenic and a cardiac remedy will render the medication more efficient and deprive it of all or nearly all its deleterious effects.

250 W. 73rd St., N. Y.

A METHOD FOR THE INSTRUCTION OF THE PUBLIC ALONG MEDICAL LINES.

BY

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New York.

"'Tis education forms the common mind;
Just as the twig is bent the tree's inclined."
—Pope.

Education spells success to the young man of today. It is the watchword of the rising generation. Man builds his life structure upon an educational foundation, and as he is deficient in the fundamentals, in direct ratio he is likely to fail in accomplishing what his ambition desires.

In every walk of life men recognize the supreme value accruing from proper instruction. The American artisan of 1910 is a better and more capable mechanic than the artisan of 1810, for he has a better knowledge of general affairs. The professional man of today is more truly a member of a learned profession than his predecessor of a century ago, because he has a more comprehensive idea of those branches which constitute a liberal education.

In the profession of medicine, marked improvement can be noted on every hand. There are now 141 medical schools in this country, some very high grade, some good and some poor, but the law of the survival of the fittest is rapidly eliminating the poor schools, and the good institutions are becoming better.

Many medical colleges demand from one to four years of academic college work as an entrance requirement. The list is constantly growing larger, and in twenty years the great majority of medical graduates will hold academic as well as medical degrees. Thus the dignity of the profession

will be increased, and the public will be benefitted, for no man in the community needs a more liberal education than the man of medicine. His work leads him into the realm of science not bounded by drugs, bacteria and surgical instruments and to attain the success which is his due, he must be qualified to successfully meet every situation.

While the physician is being perfected educationally his patient is becoming better grounded in things medical. Some of his knowledge comes from the physician, some from the teacher in the schools, some from everyday reading, and some, unfortunately, from imbibing the untruths appearing in patent medicine and quack advertisements and the distorted quasi medical stories in the public press.

This information, in many instances misinformation, is a decided detriment to the patient, and imbues him with false conceptions, induces self medication, and is likely to destroy that feeling of faith and confidence in the medical profession which is so necessary, if the physician is to bring about curative results.

Therefore, it becomes an essential that the public in its thirst for a wider knowledge of medicine be properly instructed.

Who shall the instructor be? The physician.

What shall his mediums be? The newspaper, the magazine and public lectures.

Recognizing the necessity of educating the people along these lines, the writer some four years ago, advocated the formation by the American Medical Association of a medical publicity¹ bureau which should act as a national clearing house of medical topics. This article, which was most favorably noticed by the medical press, suggested in detail the many advantages of such an organization. The editors of sev-

eral metropolitan newspapers and of some of the popular magazines were pleased to say that a bureau, properly managed, would be of great assistance to the press of the country.

Since the publication of the article in question, the subject has been taken up rather generally, and physicians have spoken and written at length upon the necessity of the education of the public.

Dr. Herbert L. Burrell, of Boston, in the presidential address before the American Medical Association in 1908,² speaking of "The Education of the Public in Scientific Medicine" said:

"Judicious publicity is, I believe, a new duty of the medical profession to the laity. How can this be accomplished? There has already been established a Board of Public Instruction in this Association. This board, as well as all committees, should be answerable to the Board of Trustees; it should be representative and eminently judicial in character and should have as advisers the experts in the profession.

"In what medical subjects should the public be educated? It will be better to teach thoroughly a few important subjects than to attempt to cover too large a field. Let us not be blind to the fact that our scope of usefulness as physicians in dealing with the large disease problems depends in great measure on the co-operation of the public. We must have intelligent co-operation to make our work as effective as may be. Tuberculosis is still the most pertinent subject on which information should be given.

"The public should be informed that at present an early, thorough operation is the most certain way of curing cancer. The work already accomplished by the public in co-operation with physicians in controlling tuberculosis, ophthalmia neonatorum and

scarlet fever comes to my mind. The work that has been done in controlling yellow fever in Louisiana by the public and the medical profession is a striking example of educating the people as to the facts concerning disease. The various infectious diseases are obviously ones concerning which the public should be informed. The people should be educated as to the necessity of pure air, pure water and pure food; they should know the hygienic value of bathing. They should know that hospitals are provided not alone for the care of the sick poor but that knowledge of disease may be advanced.

"Who among the public should first be educated? Those who are leaders in the community; those who are in positions of responsibility, national, state, city and town authorities, trustees of hospitals and schools. Experience has shown that the lay public takes a keen interest in everything concerning medicine and its progress. The success of nostrum vendors has demonstrated their skill in appealing to the sentiment of the public.

"What are the means by which we may reach the public? Newspaper articles on selected subjects giving facts concerning a given disease, but not the treatment of the disease, should be furnished the press.

"Another means of reaching the public might be by magazine articles. The facts concerning diseases might well be given to skilled lay writers, who should be paid for their services. A lay writer has the art of presenting a subject to the public in an attractive manner. For example, let the subject of animal experimentation be investigated by one of the magazine writers of this country. Open wide the sources of information to such a writer. Then let a series of articles be published in order that the public may know the truths as to the

inestimable benefits that have come from animal experimentation, not to men alone but to animals as well. Reprints of such articles, pamphlets, and circulars of information would be a powerful means of educating the public. Let circulars of information regarding the subject of animal experimentation and of vaccination be placed in the hands of every legislator in this country; in fact, in the hands of every citizen who is misinformed as to the truth.

"The medical profession and many of the public are afraid of the press. Whether this position on the part of the public is justified or not need not be discussed. I have never had occasion to appeal to the press for assistance and co-operation in any public measure without receiving hearty, but at times, to my mind, indiscreet assistance. The position of the press, as I understand it, is that it is the judge as to what constitutes news. Newspapers will publish what they think the public wants to know, but not what we think the public ought to know. They assume, quite properly, the right of decision. The greatest power that we can have to diffuse information, is the public press."

Dr. E. J. Goodwin, editor of the *Journal of the Missouri State Medical Association*, lays emphasis on the necessity of some form of professional supervision of medical topics, as set forth by the writer of this article, in a paper recently read before the Association of State Secretaries and Editors.³ He says:

"The time is fast approaching when newspapers will welcome a system of censorship on all medical advertisements and news matter of a medical nature, and this Association can and should assume the duty of hastening this time by formulating some method of supervision which would be ac-

ceptable to the owners and editors of the daily papers.

"Unaided by a properly trained medical assistant, newspaper men cannot discern a scientific discovery of real value as a medicinal measure from the blatant boasting of some far-away quack; hence they publish all medical items without scrutinizing their source or the probable object of their authors. We believe there is a disposition on the part of the editors of the better class of newspapers to adopt such a system, if it can be made plain to them that they are too often purveyors of false and unscientific matter, prepared solely for advertising some humbug disguised as a respectable doctor or institution."

Another physician, Dr. E. E. Munger, of Spencer, Ia., deplores the fact⁴ that "fraud can thrive and prosper with the press for its hotbed" and pertinently asks if "instead of being so very chary about newspapers might it not be advisable to use a little of their space for the education of the people and thereby counteract for the present, and ultimately wipe entirely out the columns of rot with which so many papers are filled, setting forth the great efficiency of some nostrum?"

Dr. Munger asks how we shall make use of the newspaper and answers it himself.

"Let the American Medical Association establish a Bureau of Education for the dissemination of such knowledge and advice as will enable the people of this country to act intelligently in matters pertaining to their own health and lives, thereby making it possible for them to assist the medical profession in their efforts to prevent disease, relieve suffering and prolong human life. Organized as this powerful association now is, this bureau would be in affiliation with each state and county so-

ciety, and there could be such a division and subdivision of the labor incident to the writing, editing and distributing of suitable articles for publication as would make a systematic campaign of education practicable."

Dr. J. Madison Taylor, of Philadelphia, in a paper entitled "Wanted, a Medical Bureau of Publicity, Especially for County Medical Societies" read before the Philadelphia County Medical Society, January 22, 1908, ardently advocated the formation of such bureaus by the different county organizations.⁵ In suggesting the use of the public press, Dr. Taylor said:

"It is necessary to meet modern conditions by adopting modern methods. Every form and kind of opponent to the purposes and efforts of the profession make use of the newspapers to reach the attention of the people. The whole crew of fakirs, grafters, panderers to evil amusements, vendors of disguised poisons, and all the disseminators of hurtful influences, employ vast sums of money through press agents of one kind or another. Conscientious editors deplore these facts, but assert their inability to differentiate. The one available means of combating these destructive agencies is for organized medical bodies to establish bureaus of publicity, safeguarded by competent committees, through which suitable information, opinions, acts or happenings shall be accurately and systematically supplied to the papers.

"All these interests which are diametrically opposed to medical ethics do employ press agents. With them it is a question of business. Good business methods demand that the public shall be made acutely aware of the more attractive phases of the proposition offered. These fakirs have goods to sell, advice, or whatever they wish to barter for money. The chief avenue of

diffusion of knowledge is the daily press, through the ordinary channels of advertisements or shrewdly placed news items.

"No organized medical body in the world spends one cent for popular education 'to put the people wise' on questions it is their desire and duty to have correctly understood. Yet a large and increasing group of irregulars do spend vast sums to mislead the unwary, thereby causing incalculable damage to mortality and health."

The editor of the *Medical Standard*⁶ is not certain that the attitude of the profession warrants the establishment of a "medical censorship of the lay press in its publication of matters pertaining to medicine and surgery." He is indeed a trifle pessimistic about the matter, observing that he is "disposed to believe that any extensive or really effective enlightenment of the public in medical matters can be brought about by a direct or deliberate attempt to educate them in such matters."

If the time is ripe for such a movement the editor is of the opinion that "the lay press is the only agency by which any extensive education can be achieved. If it is the sense of the medical profession that the people are not yet prepared for such a partnership in its truths, then it had better refrain from all association with the lay press, and have it generally understood that all medical information disseminated by the latter is unauthorized and irresponsible, and confine itself to public lectures, pamphlets, and the like, by which it must not expect to accomplish any great results. But if, on the other hand, the profession regards the time as ripe for taking the public into its confidence, and for enlisting the co-operation of the lay press in the propaganda, then it can no longer expect to exercise a paternal censorship over the medical news to be disseminated, but only an

editorial censorship, i. e., a selection of what is interesting to the public and a reasonable care of its truthfulness."

At the last meeting of the Minnesota State Medical Association, Mr. H. V. Jones, editor of the *Minneapolis Journal*, one of the leading newspapers of the West, addressed the Association on The Lay Press.⁷ He believes in a closer connection between the public and the medical profession, as evidenced by these words:

"I think the medical profession has been standing too long on ethics. It has a right to be heard and should speak out. Physicians would be surprised to learn how little people know of what is going on regarding the care of the health of the people. The newspaper men and the railroad men have always gotten along very well together, because the railroad man is generally ready to give results with real enthusiasm; but when we come to the doctor we find it difficult to make much progress, but I think if we could come together a little more we could soon reach an understanding. I am sure newspaper men would be glad to co-operate along the right lines with physicians and official bodies. That work to my mind would be educational rather than in the line of news. The press has been too commercial, there has been a letting down of standards, and too much desire to make money at the expense of standard and principle, but I think a reaction has set in. I think the time has come for the medical association of this state to take up in some way a broad educational work, and I am sure it would have the hearty co-operation of the press in this state. I do not know just how a movement of this sort should be organized, but it occurs to me that the people should be told what physicians are doing and what they are going to do. I want to leave this thought with you, that the press

of the state would be glad to co-operate in establishing a newspaper educational policy along the lines of what physicians are doing, omitting names, by studying the lines of work along which they are moving."

The writer, in common with thousands of physicians in this country, believes the public would appreciate a better knowledge of medical matters, and he also believes the lay editors of the country, in their effort to put nothing but facts before their readers would be glad to have some fountain head of medical information to which they could turn and on which they could depend.

Is there necessity for accurate information on medical topics on the part of editors? If any one is in doubt, let him read the subjoined items taken from various newspapers.

The Wisconsin Medical Journal of September, 1909, credits the Associated Press with having sent out this startling information concerning the illness of the late E. H. Harriman:

"Last year there developed a difficulty at the point where the stomach connects with the intestines. This is sometimes called a rheumatic knot, sometimes rheumatism, and sometimes indigestion. It is at the point which is known in anatomy as the caecum."

"Of all the musical curiosities that Nature has produced lately, one of the oddest is a man with a piano in his lungs. In a small Washington town is a man named Pearson, who can, without any undue effort, send forth remarkable melodies which sound like the music of a piano with a melodium accompaniment. This lung piano, as it is termed by the owner, is partly a gift of Nature, but Pearson has cultivated the use of the extraordinary instrument very carefully and thoroughly, until now

he is able to play several familiar tunes with wonderful expression and technique. Friends of Pearson say that his services are invaluable when church fairs, bazaars and country entertainments are on hand."

(*New York Herald*).

"Dr. of performed a surgical operation yesterday that is considerably out of the ordinary, and is said by Fredonia physicians to be the most remarkable of its kind in local surgery at least. Mrs. a widow living was operated on for gallstones and twelve stones of odd shapes and sizes were successfully removed. Many people have had gallstones removed but few if any one before Mrs. ever had as many as twelve removed at one time."

(*Fredonia (Kan.) Herald*).

Boston, Feb. 5.

Mrs. G. C. Lee, grandmother of Mrs. Alice Roosevelt Longworth, is seriously ill at her home in Chestnut Hill. Necrosis of the arteries is said to be the ailment from which Mrs. Lee is suffering.

(*New York Evening Sun*).

Berlin, June 8th.

Professor will succeed the late Professor The new chief surgeon is the inventor of the artificial steaming of the circulation of the blood as a cure for prurient abscesses.

(*Los Angeles Examiner*).

J. B., Marysville, for twenty years the wonder of medical science, is dead. Twenty years ago in a cutting affray B. was entirely disemboweled. His intestines fell out and were entirely buried in sawdust. Bystanders picked him up and stuffed them back several hours before medical aid arrived. He recovered and later . . . died a natural death.

(*Lima (Ohio) Gazette*).

Prof. F. Trendelenburg . . . inventor of the "Trendelenburg Posture" is visiting . . . in this city The Trendelenburg Posture consists simply of posterior operations by means of a specially contrived operating table, that in cases of a peculiarly delicate character have been remarkably successful.

(*Philadelphia Public Ledger*).

Dr. Oscar Taylor, a nose specialist of San Francisco, has been troubled for years with spines in the nostril. A few days ago he prepared his instruments to cut away one of these spines. By a slip the chisel went too far and pierced the skull, injuring the brain. Spinal meningitis set in. Physicians in attendance declare Dr. Taylor has little chance of recovering.

(*Santa Rose (Cal.) Republican*).

Dr. I. is affected with lusus bulgaricus.

(*Hastings (Neb.) Tribune*).

"Dr. C. assisted in viscerating the right eye." (*Pocahontas (Iowa) Democrat*).

Chas. Le. P. died . . . as a result of lamphigitis.

(*Hampshire (Mass.) Gazette*).

"Secretary H. was prostrated by an attack of artemva at his summer home."

(*Clinton (Iowa) Herald*).

"In addition to hernia he is suffering from a water cancer."

(*Middletown (Conn.) Press*).

"Spasm of the diaphragm resulting from the sneeze caused the vertebrae to snap." (*St. Paul Pioneer Press*).

"Abijah L. had an operation Wednesday for achanoids."

(*Windsor Locks (Ct.) Journal*).

"Dr. M. W. died suddenly of pleurisy of the brain." (*Cincinnati Enquirer*).

"— he became ill in this city with polmonary peritonitis."

(*Cincinnati Enquirer*).

"— a four months old . . . died . . . of what is known among surgeons as farman ovale." (*Philadelphia Press*).

" . . . the fatal disease at Marfa has been diagnosed as 'Stopplococus' an affection of the throat." (*Galveston News*).

Here are a few lay medical terms that are fearful and wonderful productions:

Gastrojegimostomy-Thyolite.

(*Nevada) Bullfrog Miner*.

Ankerstealeal nephortis. This disease makes the internal conditions worse than Bright's disease.

(*Fort Wayne Journal Gazette*).

Ossification of the tissues of the bone.

(*Philadelphia Evening Bulletin*).

Chronic intestinal nefritis.

(*Salem (Ind.) Democrat*).

Structure of the bowels. *Davenport*

(*Iowa) Democrat and Leader*).

Earamyoclonus, a form of nervous prostration.

(*Fort Wayne Sentinel*).

Scurvy, a sort of bleeding at the lungs.

(*La Junta (Col.) Democrat*).

We can fully agree with the editor of the *Medical Standard* "that the sporadic items of information upon medicinal topics now appearing from time to time in the daily press are of so grotesque a character that they would be laughable if they did not have so serious a side."

We feel that the only feasible method of eradicating the evil is by popular education and in our opinion the publicity bureau offers the most effective means of propagating the information necessary for the enlightenment of the people.

If such a bureau is organized, it must of necessity be conducted along newspaper lines. The chief writer should correspond in function to the managing editor of a paper. He ought to have a medical train-

ing in order that he could, as the responsible head, closely adhere to fundamental medical truths. Some of his assistants should be magazine and Sunday special writers, who by their training would be able to write material acceptable to magazine and newspaper editors.

This is an absolute essential. If a bureau were to send out matter in the formal, cut and dried style so prevalent in medical journals, the articles would be speedily condemned to the darkness of the waste basket, and the editors would learn to look upon the officials sending them as disseminators of trash.

While interesting facts might lurk within the pages of the medical effusions, no editor could be depended upon to perform a major operation thereon and carefully dissect out any striking features which might be attached to the omentum of technical phraseology.

The trained lay writer could easily be educated to take subjects pregnant with interest, such as tuberculosis, the hook worm disease, cancer, preventive medicine, hygiene, hospital abuses and the like, and weave around the basic truths a fabric so interesting and so instructive that the lay editor would anxiously seek the articles.

Many of the leading members of the profession desire the creation of a federal health board, the chief of which shall sit in the president's cabinet as Secretary of Public Health. Undoubtedly this should be brought about, but by ordinary methods years must elapse before a successful conclusion.

A publicity bureau in a series of forceful articles, could educate the public to the need of a federal health bureau. With newspapers creating sentiment for the establishment of the new department, with

the people favoring the consolidation of the different bureaus into one efficient organization, it would be comparatively easy to make Congress realize the need.

The majority of the statesmen in Washington have their ears very close to the ground and they recognize the clarion calls of the "plain peepul." There being no crying demand from the voters for a Department of Public Health, Congress does not double quick to authorize it, for Congress affects to believe that the Department is desired merely by prospective office holders, but let vox populi be raised on high, Congress would listen. In the long run, the servant seldom neglects to do the bidding of his master, and to the average Congressman vox populi is vox Dei.

Johnson said that "many things difficult to design prove easy to performance." The formation of a medical publicity bureau would naturally be attended with some difficulties, for it would be a novelty and much care would necessarily need to be exercised in the selection of its officials and in laying out the scope of the organization.

Once established it would easily and speedily prove its worth. If the American Medical Association cannot see its way clear to undertake such a labor it ought to be undertaken in a smaller way by the larger of the State Societies, for in the end, the benefits derived from the work of a medical publicity bureau will redound to the benefit of the many for whom it is intended.

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THE FUTURE AMERICAN.¹

BY

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Is the United States producing a new type of mankind? If so, what will it be? The question has been discussed for a long time and with increasing frequency of late on account of the rapid and remarkable changes due to our present immigration which is the most stupendous movement in the history of the world. New England was peopled by less than 20,000 settlers yet as many now arrive in one week. The total immigration up to 1750 was less than 80,000. The first small streams were checked rather early, so that there were but few foreign born Americans in the war of the Revolution which was fought by the descendants of as many immigrants as now arrive in one month. The modern change began about 1810, when the migration from Europe was renewed. At first it was a mere trickling stream of Scotch and Irish, then Norwegians, Swedes and Germans and finally the interior races, but growing larger and larger until it reached its present torrential magnitude.

Prior to 1850 transportation was mostly by water, so that the new-comers were those who had lived near the sea-board and as they were of the same stock as the native born, the nation easily assimilated its new citizens. The growth of land

transportation after 1850 made it possible for races in the interior of Europe to come, though the present migration stream was not noticeable until 1880. The majority of the immigrants now arriving in such large numbers are wholly different from those brought in by early movements,—they are Mediterranean and Alpine types from Southern and Central Europe, and numerous Asiatic races. What is the re-



Fig. 1. French.

sult to be? Prior to 1880 the strange new peoples arriving were so few in number that it was presumed as a matter of course that they would be wholly immersed in the mass of natives and disappear by some strange amalgamation. If this really occurs, the process will soon be reversed as the new types now flooding the land will be so numerous that they will absorb the old. In 1900, 40% of our white popula-

DESCRIPTION OF ILLUSTRATIONS.

FIGURES 1 to 7, inclusive.—Series of Alpine race, showing gradual change from French form to the Mongols of Russia.

FIGURES 8 to 12, inclusive.—First non-aryan people of British Islands. The Neolithic and "old black breed"—short frail brunettes resembling the Mediterranean race—now found mostly in peasantry.

FIGURE 13.—Round barrow race of the Bronze Age—the broad headed brunette Alpine stock which invaded Great Britain and submerged the primitive stock and was later submerged by Aryans.

FIGURES 14 to 19, inclusive.—Mediterranean Race.

FIGURES 20 to 25, inclusive.—Baltic, blond or Aryan race constituting the brainy upper classes around the Baltic. The type which cannot survive permanently very far from Norway.

¹ Based on and extracted in part from "Expansion of Races," by permission of Rebman Co., 1123 Broadway, N. Y.

tion was foreign born or of foreign parentage—at present this element is estimated to be more than half—and though the races from Northwestern Europe still greatly predominate they are bound to be outnumbered in a few decades by the new types now arriving.

Assimilation, in the sense of the absorption of one race by others, never has occurred before. England, Ireland, Scotland and Wales for instance are ethnically identical; that is, the same types are found in each. Various waves of people have migrated to those islands from the main land and Scandinavia, but are just as distinct



Fig. 2. Italian.

today as they were some thousands of years ago. Indeed there is a mixture of types in every part of Europe, so that America is not making any new experiment.

There has been curiously little change in type in this country during the last three centuries. If a man from northwestern Europe dresses as an American and does not betray his origin by speech or mannerism, no one can tell whether he is a new arrival or traces his ancestry to the Mayflower. It is popularly believed also that the climate has been modifying all types into a new and common form—one anthropologist even asserting that the process in time would make us resemble the American Indian. Such speculations are not only baseless but have ignored well

known natural laws. Nevertheless certain slow changes have been going on unnoticed all the time, and are so evident now, that it is possible to predict the final result of the new migration with a fair degree of accuracy.



Fig. 3. German.

Naturalists long ago discovered that nearly all of the physical characters of an animal or plant were evolved by the law of selection in the struggle for existence, and survived because they were beneficial. The mistake in the case of man is so common that there are very few who seem able to grasp the idea that every normal human character is necessary for survival though we often do not know why.



Fig. 4. Great Russian.

If any race migrates rapidly to a climate markedly different from the one to which it is physically adjusted, death of that type is the inevitable consequence. Extinction may be postponed many generations, for death is never immediate, and for this reason there is a widespread opinion that any type of man can colonize

in any climate no matter how different it is from his ancestral one.

Students of the problem of human origins have placed the cradle of the race in about every part of the world, but there is an overwhelming mass of evidence that at least one branch arose in Europe, and



Fig. 5. Tartars—southern Crimea.

there is a growing tendency to look upon Central Europe as the place, and the early glacial period or possibly the late pliocene as the time. Man's ancestors were cooped up there for some reason, and he arose by the survival of the most brainy in each generation in a terrible struggle for existence where escape was impossible. The



Fig. 6. Kirgiz, Horde or Bukey.

primitive Europeans thus evolved are believed to have been brunette like our Eskimos, living in somewhat similar conditions. As soon as escape was possible, by the melting of the snows in the mountains to the South, men migrated as a matter of course. The internal pressure or tendency to expand existed then as now in every species, but it was a very slow

migration in which there was time for adjustment to the new climates by survival of the proper variations. The races arising from this primitive stock are called the Eur-African, as they are related by certain physical characters and are found mostly in Europe and Africa, though they have spread eastward through Southern Asia. Indeed there is a more or less perfect gradation of forms from the blackest negro to the whitest Scandinavian.

Two of these Eur-African races particularly concern us—the Mediterranean and the Baltic. The former includes the Portuguese and Spaniards (Iberians), Italians (Ligurians), Greeks (Pelasgians), Arabs,



Fig. 7. Kalmuck.

Egyptians and Berbers, all of whom are rather short and more or less brunette. The Baltic type is tall and blond, and there is no reasonable doubt that it is the brawny and brainy Aryan race which originated the wonderful Aryan language, made nearly all history and is now practically controlling the world, though it was a negligible factor until about three or four thousand years ago.

When man arose in Central Europe, Scandinavia was covered with ice, but as this cap melted and its southern edge retreated, man followed in obedience to his tendency to spread wherever he could live. The fittest for this environment were the big blond men of intelligence. Much pigment was not needed, as the clouds pro-

tested them in this cloudiest part of Europe, and blondness actually helped to conserve the body temperature by the laws of radiation of heat. Big men had the advantage in this hunting life just as at present among the most northern body of Greenlanders, who are notoriously tall—and a stupid man was out of the race. So this branch of mankind went on for thousands of years, getting blonder and bigger and brainier, until it was able to conquer its neighbors to the South—neighbors who up to that time had been keeping it North. Then began those wonderful conquering migrations which have been so greatly

permitted of adjustment. There is not a drop of "native" Aryan blood in all India, and has not been for 2,000 years or more. Northern Europeans do not survive three



Fig. 9. Shetland Islands.



Fig. 8. Shetland Islands.

misunderstood until recently. They were now the most intelligent and muscular race in the world and it is no wonder that they should conquer their less endowed southern neighbors and constitute themselves a governing or soldier class or aristocracy. The testimony is universal, that throughout Europe, from Greece to Scotland, from prehistory until now, the ruling classes were blonder than the peasantry.

Some of the emigrants made their way to Greece and Rome, others to Armenia, Persia and even India. In each case they conquered the southern natives, built up high civilizations and then mysteriously disappeared. They were too far out of their zone and had travelled too quickly to

generations in Southern India and did not then. They may have lasted longer in the northern mountains but even there, they were out of their environment. They left their language which they had forced upon the natives, and when we first learned that it was an Aryan language we jumped to the absurd conclusion that the natives were Aryan—but if they are, so are the American negroes who also talk an Aryan language.



Fig. 10. Wales.

The Homeric Greek did not last seven centuries, probably not five. The present peasant is the descendant of conquered brunette Pelasgians—the despised farmers and laborers who had no part in the government and who were not citizens of the

Aryan aristocracy calling itself a democracy. The upper class Greeks were pictured as typical Germans, and whiter than the peasant. The blond Aryan Romans likewise soon died out under Italy's sunny skies, after forcing their Aryan dialect on



Fig. 11. Tall, lighter type, Scottish. Darker, Argyleshire.

the natives. The present Italians are of different blood—the descendants of the conquered Ligurians. Races are thus rooted to their own soil and indestructible. They can be conquered and made to learn



Fig. 12. Cornwall.

new tongues, new civilizations can be forced on them, but they survive while the conquering unadjusted intruder disappears. This has happened time and time again in

Egypt, yet the peasant on the farms is identically the same as pictured on monuments six thousand years ago.

What a contrast to this tragedy of the southern migration of blond Aryans, is the eastern migration of the brunette Mediterranean stock! This race also tended to expand in every direction but it found its way blocked to the North, and if any of them wandered into Central Africa they perished. They began percolating eastward early—probably five or six thousand years ago—overrunning the Asiatic civilizations found in Southern Asia, and turning Chaldea into a Semitic kingdom. They entered India and became the upper or



Fig. 13. Round—Barrow Bronze-Age Type—Cumberland.

ruling class ages before the Aryan invasion. They may even have entered China and Japan, for ancient trade routes extended across Asia from the Mediterranean. At the present time, there are numerous upper class Japanese who cannot be distinguished from Mediterranean peoples. Many of the Hindoos, Parsees and Persians are typical Mediterraneans—indeed they are descendants of these eastern emigrants. Survival in this case was possible because they did not depart from their zoological zone and the environment was not markedly changed, particularly the intensity of light. A swarthy Portuguese is perfectly at home in Northern India, and

so were these early immigrants. Thus a human type, like every other animal, can extend itself around the world if it will only stick to its proper zone and not travel far South or North, unless it spreads so slowly that it has time to evolve a new type by selection.

Still another remarkable survival has a vital bearing upon the future American. While the long-headed Eur-African race was spreading over Europe and Africa, a different race—the Asiatic or broad-headed

the Mediterranean and Baltic types. It is called Celtic in the West because it learned the Celtic tongue forced on it by later Aryan conquerors, and Slavic in the East



Fig. 14. Mediterranean Type—Corsican.

type—was spreading over Asia, the Pacific Islands and finally, though quite late, entering America to give rise to the American Indian. Something kept it out of Europe a long time, but finally it poured in at the beginning of the Bronze Age, percolating into every nook except possibly along the Mediterranean shore, though it did enter Greece and the northern half of Italy. For thousands of years it has repeatedly sent swarms over Europe. This western movement did not take it out of its zone so that survival was possible and its descendants now constitute the great Alpine race which is wedged in between



Fig. 15. Mediterranean Type—Berber.

because forced to learn Aryan Slavic speech, yet it is neither one nor the other, but Asiatic. European Russia may be roughly described as a mass of brunette



Fig. 16. Mediterranean Type—France.

Asiatic peasants ruled by blond Aryan Baltic types.

Though these Asiatics have survived in Europe it has been at the expense of con-

siderable selection. They came into a far darker country than the plains of Siberia, and instead of being destroyed by damages



Fig. 17. Mediterranean Type—France.

inflicted by light, the blonder variations among them were better fitted. By selection of these types the race has gradually



Fig. 18. Mediterranean Type—Parsee Gentleman.

assumed a complexion midway between the Mediterranean and Baltic types—dark brown or black hair, grey eyes and Brunette

skin. Complexion darkens towards the east and the nearer we approach Asia the more the type resembles the Mongol in other respects. As in every other similar matter in nature, no one can tell where the European Alpine type ends and the real Asiatic begins. It is interesting to note the dark yellowish skin, black hair and brown oblique eyes of some of our Russian immigrants—positively Mongolian. We need not scratch a Russian peasant to find a Tartar—it shines through. We could scratch the “White Russian forever and always find him an Aryan Slav or Teuton.”



Fig. 19. Mediterranean Type—A Parsee Bride and Groom.

We are now in a position to explain phenomena which are progressing before our eyes, but never before noticed. There is but one place in America which resembles the Scandinavian home of the blonds, and that is the coast of Alaska at about 50° to 60° of latitude. Each is warmed by a tropical ocean current, and they have about equal amounts of summer, winter, light, heat, clouds, sunshine, rain and snow. This part of Alaska is a remarkably healthy country for blonds as shown by vital statistics—indeed, they should flourish permanently on the coast. The government reports show that our soldiers are healthier in Alaska than in

any other part of the country. In every other part of this continent blonds are in the position of their elder cousins who had migrated too far south—and extinction is their fate except in the mountains, for it is absurd to argue that we can do what could not be done in Europe. Natural laws are as rigid here as in Greece or Africa.

The northwest coast as far south as Portland closely resembles northern France where Norsemen flourished and where there are still many Baltic types, though they do not flourish there permanently as the flow has always been into France from the northeast. On our northwest coast the

are no blonds—practically speaking—except emigrants in historic times. In time there will be none south of it in America. If it took two centuries to wipe out the yellow haired Vandals in Africa, an equal time will do it in the identi-



Fig. 21. Blond Lithuanian.

cal climate of our southern tier of States. The process is well under way now, after but one hundred years of experiment. Blond men have never survived in Egypt—that is, as a race—neither can they last in the nearly identical climate of Florida or southern Texas.



Fig. 20. German—Blond.

same types can survive many centuries, perhaps permanently, for it has much less sunshine than France. It is more like Norway and better suited for them, and is becoming strongly tintured with vigorous blonds. In the extreme northeast, particularly in the hilly or mountainous parts we have the latitude of Switzerland and a similar where blonds can survive though the tendency is towards brunettes. In all the rest of the country we have conditions resembling Central and Southern Europe and Northern Africa, where blonds never have survived in the low lands. The fortieth parallel of latitude practically cuts this country in half. It also passes through Spain, Southern Italy, Greece and Asia Minor. South of it in Europe there



Fig. 22. Anglo-Saxon Blond—England.

It may be asked how extinction is possible if a race increases numerically like the New Englanders. Of course it will increase during the centuries before degeneration is marked. It is now known that

the original Homeric Greek invaders were very few, yet they increased wonderfully before they began to deteriorate. The same thing happened in Southern England. There are several million more blonds in that land than ever migrated to it. It is the natural increase but the lightest are disappearing now, though being constantly recruited from the North.

It has been repeatedly shown that the proportionate number of brunettes in the United States has been steadily increasing for a century. It has been explained on the ground that we are turning dark, but it is due to the greater mortality of the blonds—a medical fact well known to the few phy-



Fig. 23. Norway.

sicians who have investigated it. Old blond families always tend to disappear—particularly in the extreme south where the vigorous types are of the Mediterranean or Alpine stock. It might be said in passing that in the mountains of Northern Italy, which are in the same latitude as the Adirondacks, there are little blond colonies believed to be remnants of Teutonic invaders of fifteen or more centuries ago, so that our blond mountaineers need not worry about an early extinction. Southern Italy, on the other hand, is more like the Southern Mississippi valley which is now filling up with the Mediterranean stock.

By a simple application of natural law, it is safe to predict that the types of future

Americans will be those which are found in similar climates in Europe—the others must perish. By running along the fortieth parallel of latitude we can see the situation at a glance. Between that line and the fiftieth parallel we will find a mass of the Alpine stock. It is perfectly clear why the surviving Americans of the north are to be brunette—with brown or black hair, grey eyes and more or less swarthy skin—men like Abraham Lincoln. As they are adjusted to the climate, the northern half of the United States is their normal home, excepting the great plains which from the greater amount of light are suitable for darker men such as the peasants of the



Fig. 24. Alpine Type—Auvergne, Central France.

Russian steppes. The Alpine or Asiatic types now coming to our shores are instinctively remaining north of the fortieth parallel of latitude and are bound to survive as they have in Europe. They are merely continuing the westward movement they began before the Bronze Age of prehistory.

The southern half of the United States is between 30° and 40° of latitude, a zone which takes in most of the Mediterranean basin and the greater part of southern Asia to which the dark Mediterranean types of men have migrated and in which they have survived for some thousands of years. They can do the same here if they do not go too far south. The Spaniards, for instance, do not survive many generations

in Mexico, for that country is too light and the native races are asserting their numerical supremacy.

As the various types of Americans are constantly inter-marrying, it is generally assumed that they will thus be amalgamated into a distinctively American type, yet such a process does not occur in nature and cannot be expected in man. Of the



Fig. 25. Scandinavian Types—Hebrides Islands.

millions of species of living things, comparatively few are produced by crossing—nearly all are descended from prior types by the law of selection. In the case of man, the half-breeds between widely separated types never survive many generations. Our mulatto for instance cannot find a suitable environment on earth and must perish.

In addition there is a remarkable tendency of many of the children of closely related types to breed true to the type of one

or other parent and not to assume a mixed form. It is the great law discovered many years ago by the priest-scientist, Mendel, and it is found to apply to every species of plants or animals in which it has been tried. With the curious tendency to believe that man is superior to natural law, it is asserted that it does not apply to him—but it does nevertheless. There is a tendency for marriage to take place between people who differ as to complexion—and yet their children are generally found to resemble one or the other parent. Pure blonds and pure brunettes are thus found in the same family. If the blonds die as in the extreme South, it not infrequently happens that the surviving members of old families are all more or less brunette in spite of some very blond ancestors. Mixed types have not resulted, but pure ones, as among other species. The unfit race has been eliminated though it left descendants of another type. It has been shown that by this process, the noble families of England, which are generally blond at first, become brunette in the course of time. The blond Aryan established the fortunes of the family and then by marriage with brunettes, the type has disappeared through the greater mortality of the blond descendants. The same process has occurred in our colonial families. Among the French Canadians, who now tend to brunetteness the change is also found, for Le Houtan stated in 1690, that a few of the women were brunette, whereas now but few are blond.

These laws prove that amalgamation of our immigrants is absolutely impossible. The types which are unsuited to the climate will be eliminated and the rest survive. There is no danger of changing into Indians, who by the way, have changed in physique so little since they left Asia a few thousand years ago that it is not

possible to distinguish many of them from Japanese peasants and other Asiatics. By slow migrations, they have evolved considerable blackness on the Amazon and are almost pale faces in New York and New England, but they are Asiatic in type everywhere.

Asiatic Alpine types have lived in Europe for thousands of years in their proper zone and can do the same here. The Mediterranean races are proving that they can live in the land of the American Indian as easily as they have lived with East Indians, providing of course they do not migrate too far from their zones. Neither race has changed into the native type in Europe or India and will not in America though some slight modification is to be expected. On the other hand, Aryans of the North had but one direction to take and that was to the South. Though possessed of large brains which enable them to conquer lower types and build up high civilizations, they migrated southward too quickly to become adjusted to the new climates and have perished. As a rule, such migrations have been tragedies, and the civilizations built up by them have deteriorated or died out when left in the hands of the lower conquered races.

Can we not see the reason for the decadence of Greece and Rome, the several dark ages of ancient Egypt and the curious decay of Indian culture after its wonderful development under the Aryan leaders? Is this to occur in America, where a wonderful civilization has been built up mostly by the brains of blond types which came from northwestern Europe prior to 1880? Is America to be left to the tender mercies of the Mediterranean and Alpine types now flooding it? Our form of government was perfectly suited to the men of 1776 who originated it, on the lines of

the Aryan democracies of old, and has already undergone a tremendous evolution to fit it to present conditions. Is it to undergo still further changes, as the Sons and Daughters of the Revolution disappear entirely? After they are gone, perhaps the future "United Nations of the World," of which we heard so much at the organization of the Hague Tribunal, may settle the matter for us. Aryans may yet rule America from the Hague just as Scotchmen are ruling much of the world from London. There can never be another dark age in Egypt as long as it is controlled from London, and the decay of American civilization is likewise unthinkable. High civilizations were built up by Europeans in Haiti and other tropical parts of America and have decayed in the hands of the lower types as the higher disappeared, but the Monroe Doctrine prevents help by any higher race, and we decline to help them. There will be no Monroe Doctrine to prevent Aryan control of America eventually—and that time will come in the distant future when the Aryan millions of Europe need the food of America and cannot get it without fighting the Mediterranean and Alpine types for control.

The blonds in America might learn how to protect themselves against the climatic factors which are now killing them off, and survive in spite of lack of adjustment—but that's another story.

We may state in conclusion that several propositions are now considered proved. Every climate is perfect for the types adjusted to it but acclimatization elsewhere is impossible. The "perfect" man who can live anywhere is impossible. Hence the further from Southern Norway we find a population, the fewer are the blonds, and they die out at a rate proportional to the light of their new home.

The medical profession can settle the matter of determining what types have the greatest mortality and which are the fittest. Will they do it? We can show why it is that our foreign born citizens are so stimulated that they accomplish far more work than their stay-at-home cousins, and why they succeed here and make fortunes for their degenerate great grand-children to squander. And why it is that so few of the descendants of the signers of the Declaration of Independence are great men.

IODINE IN THE STERILIZATION OF THE SKIN.¹

BY

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The penetrating qualities of iodine as shown in the Claudius method of preparing catgut for surgical use, has suggested its use in rendering the skin sterile preliminary to any surgical work. For many years surgeons have used iodine as a substitute for the various antiseptics in certain cases of uterine or vaginal disease, but it has been shown by Grossich that it is the best agent for sterilization of the skin, and that the best results are obtained when the usual application of soap, water, and scrubbing, etc., is omitted. Grossich found that emergency cases such as injured hands, fingers, etc., generally had more or less redness or suppuration follow the usual soap and water cleansing, even when the antiseptic washes were applied. But he also found that the application of the tincture of iodine directly to the injured members would prevent this infec-

tion and primary union invariably followed. He then began to use the iodine applications in all classes of surgical work, preceding the application of iodine only by a dry shaving of the skin. It was soon possible to explain the rather surprising claim that the usual scrubbing could be omitted, for the microscope showed the presence of soap and epithelium besides other foreign matter in the pores and spaces always found in the skin, and this matter actually prevented the entrance of any or all kinds of fluids, whether they were antiseptic or not. Grossich therefore gave his patients a bath and dry shave the day previous to operation when they were awaiting operation, and limited the use of iodine to one coat of the tincture, applied a few minutes before making the incision. Walther of Paris has made histological and bacteriological tests, showing the absolutely perfect results obtained by this method. He made microphotographs of sections of skin previously subjected to this treatment by iodine and found that every open space or lymph channel or capillary follicle, was reached by the tincture. He announces his results after an ether wash as better than without any previous application, because the ether dissolves fat and foreign substances not affected by water. The mucous surfaces of the body are sterilized in less than one minute after the application is made, but the skin may not be completely so until eight minutes have passed. In the work of the attending surgeons in the Columbia Hospital for several months past, this method of skin sterilization has been in practice and the solutions of the tincture have varied from the full strength of the officinal tincture to that recommended by some surgeons, namely one drachm to the pint of water or alcohol. Nearly all of my work has been

¹Read before So. Surg. and Gyn. Assn., Dec. 16, 1909.

done after the application of a weak tincture made by adding one part of the officinal tincture to three parts of alcohol. The results of this method of skin sterilization are ideal, so far as the emergency cases are concerned, as nearly every surgeon testifies who has tried it. The experience with the method in general surgery has also been universally satisfactory when the tincture has been used in full strength. As many surgeons are experimenting with weaker solutions, we will of course hear of some cases of infection after its application. The tincture of iodine is a seven per cent solution, while the formula of the Claudius solution is only one per cent, which would indicate that a two per cent solution would prove effective when applied to the skin. We find the use of iodine applied as described above, very useful for the following reasons:

The patient is ready for operation immediately after anaesthesia is induced, without the usual delay incident to the cleansing of the skin with soap, water, alcohol and sublimate solutions.

The patient may be kept warm and dry during the entire seance, including the time required for anaesthesia and operation.

If the incision must be enlarged or an additional one made, the sterilization can be done without delay and without danger of infection of the incision already made.

The number of surgeons who have used this method is already large and we are satisfied they are all pleased with it. The papers by König, Porter, Stretton, Goelet and Dannreuther are convincing and will prove interesting to everyone. The following are especially important:

GROSSICH, ANTONIO (of Fiume). *Zent. f. Chirurg.*, Leipzig, Oct. 31, 1908. No. 44 p. 1289.

WALTHAR, Paris Bull. et Mem. de la Soc. Chir., 1909, Mars 16, p. 345 et seq.

THE CAMPAIGN OF THE GERMAN HOSPITAL OF NEW YORK CITY AGAINST PULMONARY TU- BERCULOSIS.

BY

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So much has been written concerning pulmonary tuberculosis and so much has been accomplished during the last ten or fifteen years that I may well be pardoned the hackneyed remark that it would be like carrying coals to Newcastle for me to attempt to cast new light on the subject. Far from that, yet nevertheless as a general practitioner I am in a position to treat of various points that might possibly serve to arouse interest and activity among others similarly engaged. For it is the general practitioner, after all, who comes most in contact with the ambulatory cases of pulmonary tuberculosis.

For the same reason I shall refrain from touching on the pathological anatomy of pulmonary tuberculosis, as it is only with its prevention and treatment that the practicing physician is concerned. True, the diagnosis of consumption—a term strictly speaking only applicable to the final stages of pulmonary tuberculosis—is not a matter of difficulty; yet so much more difficult is the recognition of the so-called preliminary stages. The task of recognizing the disease once it has reached the stage of consumption may be considered as inversely proportionate to the possibility of effecting an improvement—to say nothing of a cure. I have used the term “stage” because we have become accustomed to its use. Personal experience has taught me that the universal division of tuberculosis

into "stages" is of little advantage, and often misleading. The text-books, for example, treat of the preliminary stage, the cavity stage, the final stage and so on, in this way, just as if every case of tubercular infection displayed these various stages in order, according to schedule. Experience has brought to my notice no disease of the human body that runs its course so deviously and with so little regard, as it were, for "typical text-book regularity," as tuberculosis. There are patients who remain for years—I might say decades—in the so-called preliminary stage, and whose death in the end is not the result of tuberculosis at all. Then again there are lungs in which cavities develop with rapidity, in spite of which the patients in question may live for years in comparatively good condition. In other instances death has intervened but shortly after infection without having given the lungs time to reach the so-called second or third stage. There are in fact many circumstances attendant on each case, which render some simple, some difficult.

External conditions, such as the place of dwelling, nourishment, manner of occupation, temperament, and principally the greatly varying powers of bodily resistance are the deciding factors, and render the manifestations and progress of the disease favorable in one instance and unfavorable in another. It is but natural that in the treatment of those suffering from pulmonary tuberculosis the physician must take all these factors into consideration. Although I have questioned the advantage of dividing the disease into clearly defined stages, I nevertheless believe in one stage—that in which there is hardly anything to be found in spite of the most painstaking auscultation and percussion, and in which the physician's instinct alone

warns him to be on his guard. As soon as his percussion has discovered infiltration, his auscultation bronchial or other pathological respiratory noises, his microscope bacilli in the sputum, then of course the disease is no longer in its preliminary stage but has reached that of pronounced pulmonary tuberculosis, from which point the mode of living, favorable or unfavorable as the case may be, conditions of climate, or of mind and body, must decide how great or how rapid the progress of the disease is to be; the most important factor of all being the patient's security from other forms of infection.

The treatment of pulmonary tuberculosis must accordingly be directed, above all things, against those conditions that threaten to render the case an unfavorable one.

The ambulatory treatment then, as practiced at the dispensary of the German Hospital—the proper subject of this article—is as follows:

The dispensary consists of six rooms situated in a building presented to the hospital with high generosity by Mrs. Anna Woerishoffer. It is entirely separate from the other hospital buildings and intended exclusively for those suffering from tuberculosis of the lungs or pharynx. That all these rooms are equipped according to the modern rules of antisepsis and that good ventilation is provided for, need hardly be stated. There is a large waiting room, well supplied with benches; pure, cold drinking water is conveniently at hand and the wash rooms and toilets are sanitary. At this point I wish to call attention to the cuspidors here in use, which are almost ideal in their simplicity. Instead of using one of the many patented and complicated spittoons, we use a simple enamelled bowl half filled with

an antiseptic solution; it possesses the advantage of a large opening, tending to lessen the possibility of the patient's expectorating to one side, and also that of being easily emptied and cleaned.

On admission, each patient is cautioned by the attendant (1) if possible, not to cough, and (2) if the coughing cannot be checked, to use the cuspidor. The effect of this prohibition is astonishing; no coughing is heard—which goes to prove the amount and frequency of unnecessary coughing and expectorating in daily life. A trained nurse receives the patient, and takes the history of the case, being recommended to take particular notice of such points as may indicate that pulmonary tuberculosis has set in. Personal experience has taught me that a knowledge of the patient's manner of living and of employment during recent months is of more importance than his family history. Further matters of import are whether the patient has suffered from previous illness and of what kind, particularly whether he or she has ever had pneumonia or pleurisy, has ever had blood spitting and if so with what frequency. In the case of females I make inquiries as to births and miscarriages and as to whether the patient had been chlorotic during puberty. I further inquire as to the number of children born, whether any of them have died, and if so from what causes. And although I do not attach the same amount of importance to the question of heredity where pulmonary tuberculosis is concerned as other physicians do, still I consider it worth while to know whether the patient was a first, second, third or fourth child, and so on—it having been demonstrated by experience that the later children, those born later in the life of the mother, possess less power of resistance.

The pulse, temperature and weight of the female patient is then accurately recorded by the nurse. Medical examination on the naked body is made, a proceeding which I consider of the greatest value. I endeavor to diagnose each case without relying on the bacteriological test, for but too frequently does the absence of bacilli lead us into error. At the risk of being regarded as old-fashioned I confess that I personally lay more stress on careful percussion, auscultation, palpation and inspection than I do on bacteriological investigation. The inspection of the chest alone often reveals symptoms from which conclusions as to a diagnosis may be drawn. Very frequently it may be observed that when the chest is fully inflated the expansion on one side, in the triangle formed by the clavicle, the sternocleidomastoid and the insertion of the scapular muscles, is slightly less than on the other; or on the other hand on deep inspiration, particularly in the case of thin individuals, a marked diminution of respiratory motion will be found in one or the other of the intercostal spaces. This symptom is often found in cases where pleurisy has been undergone and where the pleura have remained thickened but not to such an extent as to render this ascertainable by percussion or auscultation. Palpation of the thorax is restricted to the intercostal spaces and through the location of sensitive points becomes of value in examination. Percussion and auscultation of the thorax and the clavicular cavity still remain the most valuable methods of examination as in the time of Skoda and other masters. I have become accustomed, in percussion, to tapping as lightly as possible on the firmly applied finger. It is only in this way that slight differences of sound may be detected. In the case of lean patients—and unfortunately enough it is most

often with these that we have to deal—I frequently employ direct percussion of the chest wall. I do not consider the method of combined percussion and auscultation at the same time as of much value; be the percussion ever so slight, the stethoscope will report sounds that are often misleading. It is hardly necessary for me to mention that the best instrument of examination is after all the ear itself. Whether the investigation is carried on with the unaided ear, the stethoscope, the phonendoscope, or with other assistance, depends on individual preference for one or the other of these methods.

To interpret correctly what is heard, is the principal thing.

It is furthermore not my intention to treat of the various respiratory sounds, as I assume that it is more important for the practitioner to draw proper conclusions than to exercise his powers of nomenclature upon them. *One* exception may be made in this instance, in the case of that “unbestimmtes Athmen,” a cross between bronchial and vesicular breathing which is often found in the preliminary stages of pulmonary tuberculosis and to which Jacksch called attention years ago. Only after the physical examination has been completed, when the diagnosis has so to speak been well established, is the sputum examined for bacilli, in order to confirm it. Thereupon the nose and throat of the patient are examined, and there is hardly a case in which abnormalities of one kind or another cannot be discovered—which however are not by any means invariably connected with the pulmonary trouble. About fifteen per cent of those treated in one year at the ambulatorium were declared hopeless and turned to such hospitals as provide for these cases, or visited at their homes two or three times a week by our

nurses. These keep us informed as to the condition of the patients and endeavor to make them as comfortable as possible during the short period which the unfortunates still have to live. Where necessary, our nurse provides the sufferer with milk and other nourishment and sees to it that sanitary regulations are observed in order to prevent infection as far as the healthy members of the family are concerned. Of the remaining eighty-five per cent, half are cases which may be improved, while about fifteen per cent of the entire number of patients are cured to such an extent as to enable them, with some restrictions, to follow their vocations.

Before I take up the subject of our methods of treatment, I wish to state that at our dispensary both Pirquet's and Calmette's tests have been used in doubtful cases. My experience has not been encouraging and I am of the opinion that although a positive reaction is of confirmatory value in connection with all the other tubercular symptoms, still it is very often misleading, while a negative reaction is of no definite value whatever.

Our therapeutic methods consist mainly of dietetic and hygienic regulations and of symptomatic medicinal treatment. In cases where there is a rise of temperature, be it ever so slight, absolute rest is ordered. Throat irritation is relieved and I do not hesitate to prescribe narcotics in large doses when necessary, in those cases where I apprehend that each coughing spell may serve to irritate newly formed cicatrices. Usually however small doses of codein are sufficient to allay the desire to cough. If they are not, morphine or heroin is employed. It may frequently enough be observed that the simple order to refrain from coughing will suffice, by which however I do not mean to say that sputum which

may without particular effort be dislodged should be retained. In cases of hemoptysis, even those of the slightest degree, absolute rest is prescribed and narcotics employed. The patient is advised to remain in bed at least six or eight days after the bloody appearance of the sputum has ceased. Where nourishment is inferior, and loss of weight systematically recorded in spite of progress otherwise favorable, guaiacol is used together with arsenic, to good purpose. Of the preparations of guaiacol I prefer styracol above all others. It is a white, odorless and tasteless powder which has been used to good effect in doses of 0.6 to 0.9 gm. particularly in cases where the stomach and intestines were involved. A convenient manner of taking is in the form of tablets of 0.3 or 5 grains, which should be chewed for better purposes of absorption. In afebrile cases, the styracol also affected expectoration beneficially. We have used quinine effectively against fever, and atropin and agaricin as well as alcohol baths with varying success against the oppressive night sweats. Mercury injections, as recommended in recent years by Wright, were employed in various cases at our dispensary but with little success. The same may be said of tuberculin injections. Nevertheless I do not at all desire to call the effectiveness of these methods into question, but would state at the most that they are not adapted for use in conjunction with the ambulatory form of treatment. Careful preliminary measures in each individual case must be taken where tuberculin is to be used, and only a daily or still more frequent taking of temperature can indicate just what dose may be effectively or at least harmlessly administered. Frequently treatment with tuberculin must be abandoned for several days and then, with greatest caution, begun

again. And as the patient under the ambulatory system is often seen and examined but twice a week, a conscientious use of the tuberculin treatment may be seen to be impossible. For it to become possible, our dispensary would have to be provided with a ward in which the progress of the respective patients could be observed several times daily with a view to ascertaining the individual reaction of each to the tuberculin injection. After such period of experimentation the tuberculin treatment could well be continued under the ambulatory system probably with as effective results as those reached in the sanatoria of Trudeau or Brown in Saranac Lake, and in others. Koch's rules for the tuberculin treatment follow:

(1) Afebrile cases only, and those in which the process is in its earlier stages, are adapted to this form of treatment.

(2) Very small doses must be used at the start, and increased so minutely as to give rise to insignificant reactions only, or to none at all.

(3) Should a reaction set in, the tuberculin injection must not be repeated until the temperature has been normal one or more days.

(4) The application of tuberculin is to be continued until in the course of three or four months the tendency to react has completely disappeared.

Besides the above measures, the patient is advised to consume liberal quantities of milk in every form, and of eggs, meat and vegetables. Milk, and other ample nourishment, is furnished the poorer patients by the hospital.

The use of alcohol is absolutely forbidden. At this point I might mention a case strikingly illustrative of its deteriorating effects. The patient, aged twenty-six, was employed in a brewery, and in spite of his healthy appearance, infiltration of the apex of one lung was found, with a daily temperature of 100-101 degrees and a loss

within six weeks of five pounds. He acknowledged the daily consumption of two and a half litres of beer. Acting under my advice he abandoned this practice with the result that in the course of the second week his temperature became normal, his appetite increased and coughing grew less. Two months later we had the satisfaction of transferring him to the bi-weekly class of patients whose visits serve the single purpose of allowing us to keep them in condition. As far as fresh air is concerned it would of course be best for every sufferer from pulmonary tuberculosis to live in the country. But as this is hardly ever possible particularly for our class of patients, we caution them to keep their windows open day and night irrespective of the weather. Our nurse sees to it that these prescriptions are adhered to, by visiting the sick in their homes and supervising the carrying out of our orders.

In regard to the treatment of abnormalities of the nose and throat I am strongly opposed to operations of any kind in patients suffering from fever. In my experience they almost always prove unfavorable. And although the treatment of laryngeal tuberculosis is not strictly within my topic, I would nevertheless call attention to the fact that here too absolute rest and, where necessary, refraining from loud talking for several months, has had the best results. Treatment by means of hyperemia has not been attempted at the dispensary.

My observations, on the whole, have led me to the following conclusions:

(1) The ambulatory treatment of pulmonary tuberculosis affords the poorest patient the opportunity of receiving medical attention without the necessity of leaving his family and in many cases without interfering with his vocation.

(2) Every patient that follows our dietetic and hygienic prescriptions serves an educational purpose by their necessary communication to others.

(3) The great popular fear of the word "tuberculosis" is lessened when it is seen that many cases are improved and some entirely cured, with the result that sufferers seek medical aid more readily and without prejudice.

(4) The physician is enabled to turn hopeless cases over to the proper institutions and so to prevent a possible spread of the infection.

These advantages of the ambulatory system of treatment are offset by corresponding disadvantages.

(1) Effective treatment is impossible because the patients are not sufficiently under medical supervision.

(2) It is but seldom that a complete cure is brought about because the patient is apt to abandon the treatment after some improvement has manifested itself.

(3) Absolute rest, such as is prescribed for instance in cases of typhoid fever, is impossible, because the patient is often forced to continue in his employment in order to support his family.

The ambulatory system of treatment for pulmonary tuberculosis as practiced at the German Hospital is, in short, as effective and as great a benefit to humanity as it well can be; and it is hoped that in the near future an annex will enable us to put into practice all the methods of treatment which painstaking and unselfish labor in the field of research may put at our command.

221 E. 68th St.

In the treatment of leukoplakia of the tongue the use of strong irritant applications should be avoided, since they rarely do good and may lead to the development of cancer.

REMARKS ON THE NEED OF SEDATIVE TREATMENT IN OPHTHALMIC SURGERY.¹

BY

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etc.

On every operative ophthalmic case much care and time is spent upon the examination of the ocular lesion for which the patient seeks relief.

The previous history is carefully noted as it might have an important bearing on our results and the methods employed. The present state of the condition is most carefully studied so that our technic may be correct for the individual case. If our operation is one of an intra ocular character, especially in cataract extractions, we are inclined to devote some time in training the patient to keep his ocular movements under control and not to shift the position of the eye in the various directions with undue force and especially to train the opening and closing of the lids so as not to squeeze excessively.

When a general anesthetic is necessary the general physical condition as to heart, lung and urine is carefully examined. To all these conditions mentioned we devote much time, but how much time do we devote to the nervous condition of our patients and how much attention do we pay to this? Most text-books on ophthalmic surgery devote at the most a few lines to this subject, possibly stating that nervous patients are generally benefited by seda-

tives, as morphine, codeine, bromide or chloral.

Probably in no branch of surgery is the thought of an operation more terrible to the average patient than in operations on the eye. As we do the majority of our work under local anesthesia the patient being aware that the operation is going on and the mortal terror of moving or twitching causes a severe strain upon his nervous energies. Then again he is in constant fear that he may at any moment feel some pain.

These patients have been told, by kind friends, previous to operation, of the many cases that have lost their eyes because such patients did not hold still and this factor produces a distinct fear in each case. A patient knowing an operation to be impending is naturally rather excited and the majority of such cases sleep poorly and are very restless some days and nights before the same.

This is especially true of the more intellectual class of people who seem to have a keener sense of appreciation as to the gravity of the procedure, and who as a rule are somewhat more nervously high strung than the less intellectual class. Also certain races are especially excitable as, for instance, the Hebrews and Italians.

Again after an operation, where it is desirable to have the patient remain quietly on his back for 24 hours or longer, as is the case after cataract extraction, or where they are to be confined to their bed for a longer period, such patients become restless and especially so should they have any slight ache or pain in the operated part.

Lying in one position often causes intense backache and the patients often will turn over and roll about, despite protest and warning.

¹A paper read before the Ophthalmological Section of the Med. Society of the County of Kings, Brooklyn, N. Y., Oct. 26, 1909.

For a patient to lie quietly in bed with both eyes bandaged, as is usual after cataract extraction, for 24 to 48 hours and even longer, is quite an ordeal, and often it happens that such cases show signs of intense restlessness, raving and even dementia, which is generally relieved when the eyes are uncovered, this in itself shows the strain on the nervous system.

To overcome these mentioned nervous manifestations I think it advisable, and in some cases essential, to give to our patients ready for ocular operations nerve sedatives and mild hypnotics so as to help them over these trying periods. With this in view I have given such treatment, especially to subjects for cataract operation. Nine out of ten of these cases are under a severe nervous strain even if they control themselves well in our presence, and in questioning the family or those about them we can get valuable information on this point. My results in general seemed most gratifying and although I could not know how these patients would have acted had they not had such treatment, they seemed more composed and calm compared to others who have not had nerve sedatives. No doubt the additional sleep obtained was most gratifying. Especially after intra ocular operations they seemed less uncomfortable and restless while in bed and possibly less conscious of pain and other annoyances, the intense backache was rarely complained of.

Morphine and codeine are often used with good results, however, I feel these should only be used where the pain or restlessness is very great and when we know these drugs are well borne by the patient. These drugs often produce nausea and vomiting, and this by the cerebral congestion, restlessness and strain may do grave damage to the eye. There are also many

cases where morphine produces great excitability and delirium. This happened in one of my recent cases of extraction producing a large iris prolapse despite a good large preliminary iridectomy.

The bromides answer the purpose well, alone or in combination with chloral, or the valerianates may have the desired results. However, bromide often upsets the stomach and produces the characteristic rash which I have observed several times. Some of the mild newer preparations of bromide have helped me in many of these cases.

My attention was called to a preparation well spoken of by several New York Ophthalmologists, which I tried repeatedly and have been satisfied with its action. Have given 5 grains of bromural (alpha-monobrom-isovaleryl-urea) every 4 hours and ten grains at night 4 to 5 days before operation, especially in cases for intra ocular operation, and the day of the operation and a day following a little larger dose, continuing for a week.

The drug is mild, there was no depression or any apparent drowsiness but the patients seemed more quiet and certainly sleep was more natural. The gastro-intestinal tract was never upset despite the somewhat disagreeable taste of the drug. The results were satisfactory inasmuch as the patients were benefited.

In those cases where the milder preparations of bromide and valerian do not quiet the patient and produce sleep I have found trional and veronal, given in 10-20 grs. doses repeated if necessary, to act well.

It makes little difference what drug we use as long as we get the desired result, but some nerve sedative given a short time before ocular operation and after the same, certainly have their indication in many more cases than we have been accustomed to use them.

22 Schermerhon St., Brooklyn.

THE URTICARIA OF INFANCY.¹

BY

UDO J. WILE, M. D.,

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the Beth Israel Hospital, New York.

The subject about which I have elected to speak this evening has been chosen with a two fold purpose. First it seemed wise that I should select a subject which should be of general interest, secondly because from the study of a large number of these cases I am about to describe, I am fully convinced that they belong to the realm of internal medicine or pediatrics rather than to that of dermatology. That the subject will prove of interest, I infer from my clinical experience at the Beth Israel Hospital Dispensary, where about 15% of the total number of cases treated during the past spring and summer have been cases of urticaria in infants. Such cases then must indeed be frequent in your practices.

In order to make entirely clear the clinical picture of my essay, let me say that it goes under several different names in the dermatological literature. Bateman, the English clinician, to whom we are indebted for the first clear description of the disease, called the affection *Lichen Urticatus*; following him, Bayer and Biet described the condition as *Lichen Strophulus*; Hebra, the great Vinnese dermatologist, called it *Urticaria Papulosa*, indeed each of the earlier students of this disease, seems to have singled out a name for himself, and so in addition to the above mentioned names, we find this subject mentioned in the literature variously as *Urticaria Chronica*, *Prurigo Infantum*, *Varicella Prurigo*, *Vaccinia Prurigo*, *Prurigo Simplex*, etc., etc. Let me ask you at once to consider all these names as including one and the same clinical entity; the great

divergence in nomenclature being in part due to the different stages of the disease when studied, on the one hand, on the other, to the modifications of the clinical picture resulting from complicating factors. To Dr. T. Colcott Fox of London, we owe the really first clear logical classification of the subject; indeed after reading his admirable paper, it was with some hesitancy that I began this article, since there is little to be said on this subject which is unsaid in Dr. Fox's monograph.

The urticaria of infants does not produce the same clinical picture as the urticaria of adults; Dr. Fox in fact, considers acute urticaria as seen in adults to be very rare in infants, and while it does occur perhaps even more frequently than he believes, nevertheless it is a thing quite apart in its clinical features from the disease under discussion. The urticaria of infants is essentially a chronic disease; it may occur alike in breast fed, or in artificially fed infants, in those poorly nourished, or in those apparently well nourished. In one hundred cases, I have seen it begin as early as the fifth week of life, as late as five years; by far the largest number of cases, however, occur during the first two years of life. Sex seems to be no determining factor, season, however, has a marked influence, for the disease is most frequently seen during the summer months. Heat and cold are important determining factors, exposure to either may cause a fresh outbreak of wheals in an already suffering infant, indeed often enough one can actually see the new lesions form, when the child is undressed for inspection. Mention must also be made of vaccination even as a direct cause; the introduction of the vaccine in a few cases seems to be followed by an almost immediate explosion of urticarial lesions in a previously healthy

¹ Read before Eastern Medical Society, Dec. 10, 1909.

child. Such cases, however, result obviously from the introduction into the system of toxic material from *without*, and in this, while clinically like the majority of cases they differ etiologically from them.

Clinically, the urticaria of infants is characterized, first, by an intense pruritus, as evidenced by scratch marks, secondly, by loss of sleep and night crying, and thirdly, by a polymorphous eruption. The latter consists of wheals, deep seated papules, excoriated papules, vesicles and at times even bullae and pustules may be present. The extremities are more frequently attacked than the body, the face and head seldom. The soles and palms are very frequent sites of papules and bullae, but rarely of wheals. The wheals when first seen are quite different from those of ordinary acute urticaria in adults. They are almost invariably surmounted by a central papule or a tiny vesicle; the wheal in subsiding leaves the papule in its place. This persists for weeks and even months and so is the chronicity of the disease established. If seen early, the children may otherwise seem healthy looking and well nourished, indeed many seem especially so; later however, after many sleepless nights, the child becomes peevish, fretful, does not nourish well, the face becomes pasty, and a fair degree of emaciation may be present.

If we analyze our cases in the hope of bringing to light the possible etiological factors of this disease, two points stand out as very suggestive: First, on close questioning, a very large percentage of the mothers of infants confessed to giving almost anything to the children to eat. It was not at all infrequent to hear of a child of one or two years being given meat, soup, pickles, coffee and tea, raw fruit,

candy, and all kinds of food totally unsuited to such young digestive tracts. This is a very suggestive point but it does not explain the presence of the disease among the breast fed infants of whom there were many. I believe, however, the explanation here lies along exactly the same lines; in no such single instance could it be established that the child was fed at regular intervals of time, and what I believe is of greater import, is the fact that in practically all instances the diet of the mother was wholly unsuited to her nursing functions. From the study of the cases, I believe one can say definitely that the urticaria of infants is a vaso-motor disturbance of the skin, primarily the result of circulating toxins generated in the gastro-intestinal tract, and as I shall attempt to show later, this hypothesis is substantiated by the results of treatment tending to correct these evils. Granting the presence of an unbalanced vaso-motor system in an infant, it is easy to see how external influences such as bites of insects, fleas, bed bugs, or scabies, may be the inciting factors in causing an outbreak of urticaria in a child, the balance of whose vascular system is already upset by causes from within.

Last, but not least in predisposing factors, let me mention the habit of swaddling the infant with a superabundance of clothes, particularly those made of coarse wool. The child's body thus covered during the warm months is in a constant sweat, and the maintenance of an even body temperature so essential to the normal vascular balance, is manifestly under these conditions impossible.

The clinical picture of the infant brought to us for urticaria is a very varied one. As a rule the patient's body is covered, with especial predilection for the extremities,

with erythematous patches, wheals with central papules or vesicles resembling much the ordinary flea bite, with deep seated and scratched papules, perhaps with bullae and pustules, making a picture which is readily enough diagnosed. Yet at times this picture is so complicated, that it may be very difficult to determine the underlying cause of the eruption. The complications are almost without exception the result of scratching and subsequent infection, and so may they obscure the original picture that it is frequently impossible to say, is the eruption the result of an urticaria or does it follow eczema, scabies or other insect bites. The secondary infections complicating urticaria in infants, are impetigo and ecthyma, induced in every case by scratching. The condition and length of the finger nails is a suggestive factor here to be noted.

Treatment.—A brief word is in order as to therapeutic measures. In no other disease should the axiom, treat the patient and not the disease, be observed more closely than in the urticaria of infancy. One is not dealing with the primary dermatological condition, but with the direct effect on the skin, of an intestinal disorder. The first thing therefore to be looked into, is the diet of the infants, not forgetting in the case of a nursing infant to probe carefully into the diet of the mother, and equally important, the regulation of the number and time of the feeding per diem. Too often the children are overnursed, and indeed many look overfed, too plump as it were. Secondly, in an infant suffering with urticaria insist on, as nearly as possible, an aseptic condition of the finger nails, and so avoid distressing suppurative complications; thirdly insist on the avoidance of too

much clothing in the children, especially in the summer; this point I believe to be of particular importance.

Drugs are of minor importance; in most cases the removal of the cause removes the disease, yet there are a few suggestions which may be of help. The bowels should be kept open, and the stools rendered as neutral as possible. For this purpose the administration of the rhubarb and soda mixture in $\frac{1}{2}$ to 1 drachm doses t. i. d. will be found useful. Where the vaso-motor upset is very marked, that is, in those cases characterized by numerous easily incited acute exacerbations, some vaso-motor tonic may be indicated, such as small doses of the tincture of jaborandi; in general, however, the balance is well restored when the exciting cause has been removed, and the vascular system, except in a few cases, is better not tampered with. Locally for the itching, alkaline baths are to be recommended; the simplest being the addition of ordinary washing soda to the bath, which should be warm, and the child allowed to remain in it for fifteen minutes at least. For infected surfaces, the usual protective and antiseptic salves are useful; particularly to be recommended for ecthymatous and impetiginous lesions, is the Ung. Hydrarg. Ammon. the ordinary white precipitate ointment. To allay intense itching during acute exacerbations, besides the alkaline baths, the applications of cooling salves and lotions such as those of menthol, calamine or carbolic acid, may be applied. They do not however cure, or even help to cure the disease, nor does any other topical application.

In concluding, let me emphasize the necessity for perseverance in the treatment of this most obstinate and distressing affection of childhood. Let me urge again

the necessity of regarding this disease as one of inner metabolic disturbance, the cause of which must be sought for diligently, if the patient is to be afforded permanent relief. The therapeutic measures, therefore must be directed to the cause of the disease, and not to its outward manifestations; and finally, particular attention must be given to the before mentioned minor points in the personal hygiene of the infant, which while they do not constitute causes of the disease, serve as predisposing influences and complicating factors.

IONIZATION AND OXIDATION.

BY

J. P. DICKSON,
Franklin, Iowa.

I refer especially to the energy implied by oxidation, which according to Overton, Powell, and some almost ultra-scientific, is capable of producing, unaided, heat, motion and nerve force or mental action (ionization not included). I have seen no physiological demonstration of balanced creation of heat in the kidneys but I have had a patient in whom the kidneys were not working (likely due to a splanchnic poison of intestinal origin) and it was clear there was complete failure of the heat making function. I applied heat externally, increasing ionization, retained heat by oils, gloves, "neckerchief," jacket, etc. and gave the fullest dose of ammonium acetate, starting kidney action, and soon had the patient safely over that "spell" (atropine was used in others). There may have been retention of carbonic acid gas in the blood, or tissues, or indeed the kidneys, so as to hinder oxidation. The skin, in a neglected condition, did not favor oxidation and was

so slimy that excretion lagged. The lungs, in an engorged condition, did not favor circulation, neither of blood nor ions like gas. The treatment made use of what was left of use in the skin and it relaxed it, if the medicine did not also contract the pulmonic area of capillaries, favor the formation, or conserve the loss, of blood alkali, and furnish a little soluble food in the acetic radical. The protein molecule, less soluble, (unless it be one of serum-albumin) is, in conditions involving the lymphatic circulation, practically out of the field. I have been studying whether or not in case of vaso-constriction there is not accumulation of lymph in the periphery, and it seems it does not readily pass into venous capillaries for some physical reason, likely best seen in Draper's "Medical Physics" or Stern's "The Autotoxicoes" (see La Force on Peritonitis—Keokuk). I do not know as to circulation of colloids that lymph vessels have been traced to the stratum mucosum, or any further than the blood vessels have been traced, but I feel sure the lymph vessels are to be reckoned with and to be acted on even before the blood vessels. Porter of course was not giving pathological physiology. It may be nevertheless that oxidation of colloids in the kidneys is not normally the rule (though Nature could thus increase ionic action) but is dependent on some failure of the lymphatics in the kidneys, or more remotely, and but one poison has been claimed to affect the lymphatics—curain. I have seen no demonstration of autonomic nerve supply to the lymphatics. That the lymphatics may be affected as well as other vessels may be inferred from the presence of muscles in the thoracic duct (Howell), and may be in other lymph channels. Mercury and gold so modify lymph as to raise the question of use of lymph as well

indicated. Ammonium chloride, being a sort of substitute for calomel and well known to favor absorption, may do so by an ionic action on or among lymph (colloid) molecules (see Rockwood's work) but it is not conserved in the system as are the metals. One writer has considered briefly the lymphatics in the kidneys and another admits failure to oxidize proteids, produces casts even when diet is merely in excess and there is no epithelial lesion in the kidneys, but he does not exclude oxidation therein no more than Porter excludes lymphatic derangement prior to oxidation there. The derangement may begin by a chemical or physical cause and be followed by complications such as infection or traumatism, trophic insufficiency or catabolic retentia (even "abnormal menstruation" of "lymphogenous origin."—*Med. Standard*). Lymph does not show the effects of gravity as readily as serum; nor does it so readily exude on skin. Hence its deposits are more general and more firm; but may be quite local and tough. We have, if possible, to distinguish lymph from deeper deposits of salts and consequent hydration of muscles, etc. The infections written of as being found in lymph channels and glands are numerous, typhoid, erysipelas, scrofula or tuberculosis, etc. The toxins vaguely given as affecting metabolism are toxalbumins, diamins, leucomains, ptomaines, etc., while the graphic formula and symbolic grouping have not been presented or have not as yet suggested a chemical antagonism, nor has much progress been made in the study of chemical lesions and repair after the study of tetanus. The latest out is an effort to show puerperal eclampsia is due to a "ferment" and the clinical picture is one also of lymphatic involvement. Well, curain is not far dif-

ferent from a ferment. There is a certain stage in which besides subsultus tendinum there is spastic action contracting the muscles, flexing the fingers, showing that the poison acts on the spine, is the cause and not the effect of circulatory changes in the brain; that is, this may be noted in other than scarlatinal, pneumococcic and tetanic infections, and may not be a mere reflex from intestinal irritation. Between attacks there is a vague subjective symptom referred to the abdomen, which I have not traced to duct or ileum. We may owe something to non-medical treatment or means to change the circulation and so aid in resisting chemical change and its train. This point needs pressing as the lay mind is not wedded to germs and the tactful physician needs a good vocabulary just now. I opine that we must trace force much further than oxidation just as we must trace solution much further than water. Some refuse to drink water till salts enable them to use it—others drink to excess and get internal reaction, abnormal thirst, lessened kidney action. Even test tube solution is translation. Experiments in fasting show great conservation on elimination of food waste has been enriched, but dietetic error is recovered from in seldom less than three days and it takes two weeks of abstinence as to most particular articles to convince a patient of error.

Always remove by surgical means a chancre of the lip. When it is considered how many innocent persons are exposed from a syphilitic sore in this location it is surprising how many physicians neglect this most important method of prophylaxis.—*J. J. McKone, Int. Jour. Surgery.*

CORRESPONDENCE.

THE UNITED STATES PHARMACOPEIA.

To the Editor

AMERICAN MEDICINE:

I have read with much interest your editorial articles on pp. 549 and 550 of the November issue of the magazine. There have been so many articles written on the Pharmacopeia from a medical standpoint which have been misleading or which show but a one-sided view of the subject that I can assure you I read your article with much satisfaction.

The Pharmacopeia has reached such a position as a national authority and law book since the passage of the Food and Drugs Act that past history will help us but little. It is the present and future status of the book which should have exclusive consideration.

I have seen no indication on the part of pharmacists, chemists, or pharmacologists to exclude the medical profession from helping to the utmost and it is the prerogative and bounden duty of physicians to have the greatest weight in the coming revision in deciding upon the articles which are to go into the Pharmacopeia and those which are dropped; and of course it would be absurd to place the responsibility of the doses upon any other than the medical profession. What is needed more than anything else is harmonious co-operation and the question of "who is greatest" can well be left to the historian of the next century.

Some of your editorial remarks, strangely enough, bear particularly upon the "Coudrey Bill" just introduced into Congress. This bill provides for the standardizing of every medicinal substance whether used for *men or other animals*. Chemistry and pharmaceutical chemistry have not advanced so that this is possible and centuries will be required before this can be done. We will have to depend for many tests of identity and purity upon other means than standards and quantitative tests.

The Food and Drugs Act has wrought marvellous changes in the quality of medicines. Adulterations and sophistications are being weeded out with great rapidity and what can be more conducive to success-

ful medical practice than having absolutely reliable medicines with the necessary experience on the part of the physician to use them with judgment and discretion derived from experience and study?

Very truly yours,

Joseph P. Remington.

Philadelphia.

ETIOLOGY AND DIAGNOSIS.

The Diagnosis of Ulcer of the Duodenum.¹—Codman presents the following résumé of his observations: In the development of mammals the large intestine is swung across the small, thus necessarily the whole blood supply of the small intestine and most of the large must cross the small intestine. This crossing place occurs at the end of the duodenum beneath the superior mesenteric artery. But in horizontal quadrupeds no obstruction is produced at this point, while in vertical man a greater or less obstruction must necessarily be thus produced. As a result of this obstruction in man the secretions of pancreas and liver may at times be thrown backward on the first part of the duodenum, the first part of which is unfitted to withstand long continued action of these secretions, since its mucous membrane is histologically and developmentally different from the rest of the duodenum and is more closely allied to that of the stomach. The action of these caustic secretions on this unprepared mucous membrane may give rise to irritation accompanied by certain painful sensations, which may be felt in the epigastrium and attributed to the stomach. Long continued action of this kind may, under certain conditions, lead to erosion and even deep ulceration of the mucous membrane just below the pylorus. Such ulcerations, when they are close enough to the pylorus, lie in the folds of mucous membrane just outside it, and are comparable to fissures of the anus, and, like fissures of the anus, they are kept from healing by their relation to the sphincter. Clinically, hunger, pain, and dyspepsia are the primary symptoms of such ulcers or fissures, and certain other

¹ E. A. Codman, M. D., Boston Med. and Surg. Jour., Nov. 25, 1909.

clinical phenomena are secondary symptoms. In the diagnosis of these cases mistakes are made by too great consideration of these secondary accidental symptoms and too little attention to the primary insignificant hunger pain and indigestion, and when these considerations are taken into account, the diagnosis is really not difficult in the advanced cases. Ulcer below the pylorus is more common than it is above, and in future we must make diagnoses of duodenal or possible gastric ulcer instead of the vice versa. Duodenal ulcer is nearly as common as acute appendicitis.

TREATMENT.

Senile Dyspepsia.¹—The treatment of senile dyspepsia is essentially the same as that adopted in the allied conditions of achylia gastrica and atrophy of the stomach. Mastication must be performed in an efficient manner, and new teeth should be inserted when necessary. The state of the mouth requires careful attention, and a wash composed of Condy's fluid, boric acid, or other antiseptic should be employed after each meal. Special precautions must be taken to protect the patient from exposure to cold, and it is advisable that a woolen or flannel belt be worn next to the skin of the abdomen both summer and winter. Fluids always increase the tendency to flatulence, and consequently beef-tea, broths, and soups should be avoided, and only a small quantity of hot water be allowed at the end of the principal meal. Tea always disagrees, and the various sweet preparations of cocoa are apt to excite gastric fermentation; but a palatable beverage may be prepared from the cocoa nibs or husks. Some individuals are able to take coffee without discomfort. The addition of a tablespoonful of brandy or whisky to the hot water taken after meals is often of value in allaying the epigastric distention, but wines, malt liquors, and effervescent drinks must be avoided. Raw milk should be prescribed with caution, and in most cases it requires to be diluted with lime-water, mixed with citrate of sodium or peptonised, before the

patient can digest it. The fact that subacidity always exists renders it necessary to restrict the diet to finely minced white fish, chicken, game, brains, tripe, sweetbreads, calves' feet, eggs, and scraped or pounded raw meat. Green vegetables and raw fruit always increase the indigestion, but cauliflower, seakale, stewed celery, and asparagus may be given in moderation, or a baked apple may be taken with the midday meal. Toast is preferable to bread, while buns, cake, and pastry must be prohibited. Fats may be allowed in mild cases and cod-liver oil is often of much benefit, but in advanced cases fatty substances are apt to produce nausea and diarrhoea. The various digested and semi-digested cereal foods, maltine, and sanotogen help to vary the diet, but barley, oatmeal, and rice must be given with caution.

The main indications for medicinal treatment are to correct the subacidity and to relieve the flatulence and constipation. For deficient digestive power of the stomach it is customary to prescribe dilute hydrochloric acid after meals in combination with pepsin, papain, or other artificial digestives, but when given in the ordinary way the mineral acid seldom produces any good effect, while pepsin and its allies are useless. A better plan is to administer 6 ounces or more of a 0.05 per cent. solution of hydrochloric acid, combined with one and a half drachms of glycerine, twice a day after the principal meals. As a rule, the best aid to gastric digestion is to be found in the administration of lactic acid bacilli in the form of Metchnikoff's sour milk. If this is properly prepared and a tumblerful be taken with the meals each day many of the dyspeptic phenomena vanish after about a fortnight and the flatulence is greatly relieved. According to my experience the various tablets composed of lactic acid bacilli at present on the market are of very little value. Maltine and takadiastase are chiefly of use when intestinal dyspepsia exists and should be given with the meals. Tonics always increase the flatulence and even the various bitters prescribed with the view of stimulating the appetite usually disagree after a few days. In order to relieve an attack of flatulence a draught containing ammonia, ether, and spirit of cajuput is usually employed, but a far better remedy is to be found in the

¹ W. S. Fenwick, M. D., Lond. Lancet, Nov. 6, 1909.

alcoholic essence of peppermint introduced by Ricqlès and now obtainable at most of the large chemists in London. One teaspoonful or less in a sherry-glassful of water seldom fails to relieve the feeling of distention or an attack of wind colic. For the constipation, salines and mineral waters should be avoided and recourse be had to a mixture of cascara and maltine, a confection of sulphur and guaiacum, the infusion of senna pods, or to an occasional dose of grey powder.

The Treatment of Abortion.¹—In concluding a very complete and comprehensive article, Stowe calls particular attention to the following points in the treatment of abortion:

1. The importance of treating all cases of uterine haemorrhage accompanied by intermittent pelvic pain in a woman of child-bearing age as acute abortion.

2. The value of absolute rest in bed in the treatment of threatened abortion until all pain and bleeding have ceased.

3. The necessity of saving as much blood as possible to avoid a long period of anæmia and prostration.

4. The selection of cotton pledgets in lieu of gauze strips as a material for vaginal tamponage.

5. The use of finger curettement and manual removal of the uterine contents *wherever possible*.

6. The performance of Hoening's abdomino-vaginal compression when the conditions are present.

7. The difficulty of complete sterilization of laminaria tents.

8. The danger of perforation of the uterus with steel dilators and sounds.

9. The great danger of uterine perforation with the steel curette in acute abortion and the value of the instrument in chronic abortion.

10. Curettement should be raised to the dignity and seriousness of a surgical operation and should be performed under the same surroundings and with the necessary equipment.

11. The importance of refraining from curetting after the complete emptying of the uterus.

12. The use of ergot after the uterus is empty.

13. Local interference in septic abortion when the infection is limited to the uterine cavity. Less tendency to interfere when the adnexa or peritoneum are involved in the septic process.

HYGIENE AND DIETETICS.

Oxygen Baths.¹—Efforts have been made for several years past to impregnate water with active oxygen, and many means have been employed, but without much success, until a firm of manufacturing chemists conceived the idea of using sodium perborate, which, as is well known, has an unusually high content of available oxygen. Under the name perogen bath this is now on the market, and after an examination by the council on pharmacy and chemistry of the American Medical Association has been admitted to the list of accepted remedies. Perogen bath is described as a preparation consisting of a catalyzer and sodium perborate capable of yielding ten per cent. of oxygen, the two substances being wrapped separately. When the two substances are mixed with water the catalyzer, which is a medicinally indifferent substance, causes the liberation of the available oxygen of the sodium perborate. The oxygen bath thus obtained is said usually to reduce blood pressure and the pulse rate to a much greater extent than the ordinary bath. It is represented to have marked tranquilizing and somnifacient effects. It is asserted to be useful in cardiac affections with high vascular tension and excitement, neuroses, insomnia, chronic nephritis, and skin diseases in which hydrogen dioxide is indicated. It is recommended to be given daily up to twenty-four or forty-eight baths, with occasional intermissions.

The Diet in Typhoid Fever in Children.²—Children stand starvation diet badly; it has no place in the treatment of typhoid fever. Even under the most favorable conditions there is bound to be a loss of energy, and unless the nutrition is sufficient for all of the child's needs there will

¹ H. M. Stowe, M. D., Chicago, Surgery, Gynecology and Obstetrics, Jan., 1910.

¹ New York Med. Jour., Dec. 11, 1909.

² Le Grand Kerr, M. D., Am. Jour. Obstetrics, Nov., 1909.

occur a considerable loss of weight. An exclusive milk diet far from meets the demands. There must be supplied to the child food which will give enough energy and allow of sufficient variety to aid in keeping him in good resistant condition. The most satisfactory method is to remove the top pint from a quart bottle of milk and dilute it with one pint or less of boiled water. In children under five years the dilution of pint and pint is best, but in older children it is better to allow the cream to remain concentrated and dilute the pint with eight ounces of water. To each ounce of the milk so treated there is added from one-half to one dram of sugar of milk. This latter is a most valuable addition to the diet. In the administration of food regularity must be the keynote. It is not sufficient that we prescribe a certain amount of nourishment every so often, but there should be some definite idea of the needs of the child.

For practical purposes this may be best calculated by the weight of the child.

We may proceed somewhat as follows: There should be provided such an amount of food as approximates the caloric need of a child at rest with a further addition to prevent as well as limit protein loss. For every five pounds of the child's weight, we should provide in each twenty-four hours approximately:

Milk (treated as suggested) $2\frac{1}{2}$ ounces.

Sugar of milk $1\frac{1}{4}$ to $2\frac{1}{2}$ drams.

Eggs (raw) $\frac{1}{2}$.

Cereal gruels 1 to $1\frac{1}{4}$ ounces.

To illustrate: a child of fifty pounds would be given (in twenty-four hours) milk, 25 ounces; sugar of milk, $12\frac{1}{2}$ to 25 drams; eggs, two to three; cereal gruels, 10 ounces.

But to add to the variety of this as well as adding an extra amount of nourishment which is easily and usually eagerly taken, I am in the habit of using vegetable purees in the milk. The puree is made from any fresh vegetable which is cleaned and cut fine, and covered completely with cold water. This is boiled for from four to six hours and strained. Then the clear liquid is reboiled for five minutes, restrained, seasoned and thickened with arrow root. This is used as a stock, and is added to the milk in about the proportion of two ounces to eight. By varying the vegetable the appetite is appealed to. Water should be

given somewhat freely and at stated intervals, although it needs to be remembered that with the milk treated as suggested, there is considerable amount of water added to the diet. As soon as the temperature has remained normal for five to seven days solid food may be added in the form of stale bread, zwieback, toast, or a well-cooked cereal. The return to a full diet can be made more rapidly than in adult cases. The return to a whole milk in the dietary should be made with considerable caution because there persists for a long time an intolerance to it.

GENERAL TOPICS.

Relation of the Nose to Digestion.¹

The digestion may be influenced by the olfactories in several ways—directly, reflexly through idiosyncrasy, or by some complex psychic process hard to analyze. It is estimated that it requires about 2,000 cubic feet of air to pass daily through the lungs of an adult in order to furnish enough oxygen to maintain good digestion, and, as the greater part of this air passes over the olfactory region, the content of odorous substances it contains may exert a marked effect on the alimentary tract.

That appetizing odors may make the mouth "water" by stimulating the salivary glands is well known, and Pawlow has shown that the gastric juices are fully as susceptible to the gentle suggestions of the olfactory organs. Every one who reads these lines can doubtless remember a past experience, when fragrant odors wafted by friendly breezes from some near-by kitchen not only whetted the appetite, but also brought about in the stomach that gnawing sensation which only a bountiful flow of the digestive juices can produce.

On the other hand, no one factor can exercise a more malign influence over the appetite, and with it the digestion, than foul or repulsive smells; for we must admit that, as Bassler well says, "viewing the body as a whole, a marked disturbance in any organ outside of the digestive canal acts as a chestnut-burr irritation in upsetting the normal nervous balance of the neurologic system, and that these abnormal stimuli

¹G. M. Niles, M. D., Atlanta, Ga., Jour. A. M. A., Oct. 16, 1909.

manifest their effects most easily on the digestive organs, which, through abundant sympathetic supply, are most sensitively balanced." As some loathsome sight or a disgusting mental picture may kill the appetite and "turn" the stomach, so a foul odor, through its reflex action, may just as effectually dry up the "appetite juices." Even after digestion has normally begun, the presence of a disagreeable odor may retard its progress, and, by inhibiting the secretion of gastric juice, and checking the motor waves of the stomach, may allow stagnation, bacterial fermentation, and the formation of gases and irritant decomposition products.

The influence of odors and perfumes on many people is exceedingly marked. Some there are who can not remain where lilacs are in full bloom, or bear the odor of jasmin; others are given a headache or are nauseated by heliotrope or tuberose, while the smell of cantharides often causes vertigo and a sinking sensation in the epigastrium. Even the fragrance of roses has an irritating and nauseating effect on some. Attacks of real illness, with long trains of digestive disorders following in their wake, may be brought on by odors.

Superstitions of Childbirth.¹—There are many superstitions connected with childbirth, says Pickin, who has at different times been made acquainted with the following simple methods of foretelling the sex of the child during pregnancy:—

1. If the chief prominence of the abdomen is high towards the end of pregnancy, the child is a male; if low, a female.

2. If the abdomen is more prominent when viewed from the side, there is a boy; but if more prominent when viewed from the front, a girl.

3. If, when a woman has given birth to a sequence of boys (or girls), there is a change in the usual course of events during her pregnancy (*i. e.*, if she suffers from vomiting when she has not done so before, etc., etc.) it forebodes a change of birth and the child will be a girl (or boy).

4. If towards the end of pregnancy a drop of secretion is squeezed from the breast into a glass of water and it sinks, there will be a boy; but if it spreads out and floats upon the water, there will be a girl.

"The last method," continues the author, "was told me by an ancient midwife in Somersetshire, who assured me she had never known it to fail.

I am also indebted to the same good lady, Mrs. A. for some interesting facts relating to the caul. She informed me that her sister was born with a veil or mask over the face, which was carefully removed and put aside by those present, special care being taken to prevent it coming in contact with the ground because of the bad luck which would follow. Later the 'veil' was spread out to dry, then it was wrapt in tissue paper, labelled, and kept until the child was grown up, when it was given into her charge. She still had it in her possession when 76 years of age (1907), although it was reduced to dust and so small in amount that it could be placed upon a sixpenny piece. She would not have parted with it on any consideration because it would bring her bad luck to do so. Mrs. A. also told me that if the 'mask' is neglected at birth and thrown away, the child when grown up could see visions, foretell death, and have the power of 'over-looking' people. She stated that her own nephew was known to have these powers for this reason.

Sea captains used to purchase these 'cauls' because it was believed that no vessel with one on board could be lost, and it is said lawyers also used to buy them in order to attain eloquence, but the owner of a caul would have to be very hard up before parting with it because of the ill-luck that might ensue. Mrs. A. knew of five pounds being offered for one and refused. I know of a woman who recently sold a caul to a sailor for thirty shillings.

The following advertisements, copies of which I found in Brand's *Popular Antiquities*, prove the value that once attached to these charms:—

"To the gentlemen of the Navy and others going long voyages to sea. To be disposed of, a child's caul. Enquire at the Bartlet Buildings Coffee House in Holborn. N. B.—To avoid unnecessary trouble, the price is twenty guineas." *Morning Post*, August 21st, 1779.

¹ F. H. Pickin, M. R. C. S., *The Practitioner*, Oct., 1909.

'A Child's Caul. Price Six guineas. Apply at the Bar of the Town Shades, corner of Tower Street. The above article, for which fifteen pounds was originally paid, was afloat with its late owner thirty years in all the perils of a seaman's life, and the owner died at last at the place of his birth.' *Times*, May 8th, 1848.

In Bristol I have seen the placenta of a primipara placed upon the fire in the lying-in room and have watched the young mother counting the big "pops" to ascertain the number of children she was to be blessed with. These "pops" or "crackers" are caused by the bursting of any blebs that may arise owing to gas formation.

It is commonly believed among husbands that, in order to safeguard the child, the wives during pregnancy must be supplied with anything they have a great longing for. Some wives are not above longing for new hats."

THE ANNOTATOR.

Sanitary Condition of New York Harbor. The Metropolitan Sewerage Commission of New York City has published a "*Digest of Data*" collected before the year 1908, and the matter deserves far more comment than it has so far received for it is of the utmost importance. Unfortunately, a broad interpretation of the data is merely that the harbor of New York City is filthy with sewage—a fact we all know and one which did not need laborious bacteriological confirmation. We also knew that on account of the slowness of the tides, practically none of our filth reaches the sea but that some of it is destroyed as in a septic tank, the balance of the precipitated materials being deposited mostly along the shores.

The scouring action of tidal currents, of course, prevents deposition in the channels to more or less extent, though not entirely, for colon bacilli were found "at the surface of the bottom of the harbor at all points in the upper and lower bays, including the rivers and canals."

Some of this sediment undergoes chemical changes until it becomes offensive black mud and even colon bacilli are found in it to considerable depths. Long before septic tanks were dreamed of, Waring had called attention to the slow diminution of the

material in cesspools, and showed that where the daily deposits are not too great the vaults have been known to have not necessitated excavation for many years—the state of affairs in our own harbor when the city had a small population. When the deposits are introduced faster than the old ones decay, then occasional excavation became necessary, and when our city became congested with people, we began dredging around the docks for the same purpose. It is therefore somewhat surprising that the Commission concludes that "the harbor is not like a cesspool in which bacterial multiplication is a leading feature. Either the sewage in the harbor is disposed of in other ways than by bacterial action or the bacterial action is very rapid."

It is shown that sewage floats on the colder heavier sea water brought in by the tides, and that the currents are exceedingly variable. It is also shown that the bacteria, as a rule, are more numerous in winter, as would be expected from the destructive effects of the summer sunlight. It is not generally known, by the way, that minute forms of life are far more numerous in northern waters than in the tropical, probably for the same reason.

The most amazing part of the report is a synopsis of investigations of the sanitary condition of Gowanus Canal, made by Charles F. Breitzke (*Technology Quarterly*, Sept., 1908). It is a revelation of a state of affairs so foul as to be a blot upon our boasted civilization—an open septic tank 100 feet wide and two miles long whose odors are noticeable for several hundred feet—and it could all be remedied at an expense which would enhance the value of the adjacent property much more than the outlay—not to speak of the improvement of health.

The condition of the Passaic River shows the utmost need of a radical change in our methods of dealing with domestic and industrial wastes.

It is regrettable that this preliminary report does not mention the remedial measures now under discussion, for the public are keenly alive to the conditions and are sure to demand suggestions for early relief. The data are now sufficiently voluminous, and though some of the investigations were of no particular use, a few being considered

even inaccurate, yet as a whole, the report is a splendid beginning for future reforms. Now let practicable schemes be worked out without delay.

Every now and then the world is given some book that marks an epoch of thought, a book that so arranges old facts, or so garbs them in new apparel that they appear new and altogether startling. Such a book is Major Woodruff's "*Expansion of Races*." Few there are who can read this notable contribution to ethnologic study without being impressed by the way the author has taken established facts, and put them to work proving his contentions. As one reads, therefore, one's interest is bound to grow, for the ideas and opinions of the writer are expressed in familiar terms and based on phenomena generally known if not generally understood.

No novel or tale of adventure was ever more interesting. Dr. Woodruff is a splendid writer. His pen is most facile and his diction is delightful. With the skill of the true artist he takes the most prosaic facts and with a deft touch gives them a new and distinct personality. Indeed he unfolds the story of racial growth and progress in such a way, that his book has all the fascination of romance and fiction. People, even of marked intelligence may be slow in taking up Dr. Woodruff's book, but when they do, they are sure to read it with an application that is given to few scientific works. Antagonisms will be created and many of his deductions will be questioned and denied. But the stimulation of thought and the broadening of opinion cannot fail to repay the reader many times over the time required for perusal.

In every way this book serves to broaden the mental vision. It establishes a better perspective and gives a truer balance between the multiple details of human living. Space prevents considering its many topics and sub-topics, but no physician or intelligent layman should fail to read and ponder this really masterful book. Next to Darwin's "*Origin of Species*," Woodruff's "*Expansion of Races*" should

be found in every library. To some this may sound like fulsome praise, but those who once fall under the spell of Major Woodruff's book, will understand and grasp our meaning. The excellent opportunities of studying races and peoples, that Major Woodruff has enjoyed, have given him a practical viewpoint that is of infinite value to a really scientific mind. The combination of opportunity to observe and capacity to understand and classify, rarely occurs. It has, however, in the instance of Major Woodruff, and the world is the richer for it.

Valuable and intensely interesting as every intelligent person will find the "*Expansion of Races*" we venture to believe that ten years from now it will just begin to be appreciated. The reading public will be better able then to grasp its teachings and absorb its lesson. In the meantime it will do a splendid work in diverting thought from acquired grooves and directing it into unknown but perhaps more productive fields of activity. What greater success could an author wish?

SOCIETY PROCEEDINGS.

EASTERN MEDICAL SOCIETY OF THE CITY OF NEW YORK.

STATED MEETING, FRIDAY, DEC. 10, 1909.

1. Presentation of Specimens and Report of Cases.

- (1). *The Urticaria of Infancy*, by Dr. Udo J. Wile. (See page 42).

DISCUSSION.

Dr. H. Schwartz said he had been very much interested in Dr. Wile's paper, especially that portion of the subject referring to infants, and breast-fed infants in particular. He thought urticaria, as is usual with all diseases that have been ascribed to so many different causes, had no specific cause. He had recently had the opportunity of investigating some causes of urticaria in the breast-fed. He had found in these cases that the fat content of the milk taken by the child usually had been very high, and in one case where the urine had been examined the ammonia excretion was high and there was an increase in the fatty acids in the stool, showing that evidently there was an intoxication, with an increased elimination of alkali. That this is not the only cause had

EXPANSION OF RACES. By Charles E. Woodruff, A. M., M. D., U. S. Army Medical Corps. Large 8mo, 500 pp. cloth. Price \$4.00 net. Rebman & Co., Publishers, New York.

been shown by the fact that in one case the fat content was low in the milk. The speaker thought there evidently was some poison circulating in the blood of such children, which with an added trauma to the skin—either heat, light or cold—produced a local irritation and the characteristic wheal. He cited a case of scarlet fever where the administration of large doses of quinine had produced urticaria. The local condition had been the previous trauma to the skin from the scarlet fever, while the primary condition had been the circulation of the quinine.

Dr. Ludwig Weiss said that urticaria was the bane of dermatologists, pediatricists and the general practitioner, inasmuch as while the symptoms were easily recognized, it was very difficult to cure. To not one, but to several causes is it attributable. Generally it is caused by intestinal auto-intoxication, but usually it is difficult to find any shortcoming in the digestive system. While dilatation of the stomach is said to be a constant feature, in this dermatologists do not agree. That auto-intoxication is the main factor in producing it is almost a certainty, but the way in which the auto-toxic substances are carried from the intestinal tract to the skin is as yet an undecided question.

In speaking of the different etiological factors, the speaker cited an instance which he said had not been touched upon during the evening, the contention of Hutchinson who called attention to the frequency of this affection after eruptive fevers. Like urticaria it sometimes occurs after measles and then assumes a papular type, and when it appears after chicken-pox it appears in the vesico-papular type. So it would seem that there is a consequence between the original disease and the consequent urticaria.

It is known that the auto-toxic substances may act as irritants either to the nerve centers or terminals and thereby provoke pruritus, disturbing the lability of the skin, causing as it were an abnormal reaction, in consequence of which the circulation becomes impaired and may lead to an urticarial condition. The eruption consists of a papule or papulo-vesicle, around which is a hyperaemic border, the urticarial part of the eruption. This is evanescent, making its appearance mostly at night or after the ingestion of food, while the papules remain sometimes for weeks and months. This disease has also been known by some of the older writers as "gum-rash," as it sometimes accompanies dentition. It was Bateman who first recognized the relation of the papule to the wheal, calling it urticaria, while to Colcott Fox is due the fact that it is regarded as a morbid entity.

In the pathology of exudative erythemas their vasomotor origin and angioneurotic character usually are emphasized. But it is equally true that the metastatic theory offers a more natural and tangible explanation. This is, under certain restrictions, true. It is the transmission of irritant substances to the skin, the alterations in the walls of the vessels that cause the

erythema lesions. The irritative substance on its way from the blood to the surface undergoes certain alterations, satisfies certain affinities, is attenuated, as it were. The process will first invade the deeper strata of the skin and, expending its force, the main lesions will be found there.

The angioneurotic alterations of the skin are nothing else than the reactive irritation phenomena of the vessels. Erythema or urticaria papulosa is the simplest kind of inflammation, an inflammation of a very mild type, a metastasis caused by the alterations of the walls of the vessels, of short duration.

As to internal treatment diet is of the utmost importance. Next in importance is environment—cleanliness of body and surroundings, as the extremely tender skin of infants and children is peculiarly susceptible to urticarial lesions, especially after insect bites, etc. Dyspepsia, obstipation and anemia must be relieved, and particular care exerted in the selection of food. Internal medication consists of antifermentatives, Beta-naphthol and saline purgatives, or salol in small doses.

The speaker said he had been quite chary of giving atropine to very young children. He mentioned tincture of colchicum as a remedy not heretofore employed in the disease under discussion. Because of the fact that in rheumatism as well as in urticaria there is a deficiency of urea, it had occurred to him that the employment of this drug, of signal effect in gout and rheumatism, would augment the internal armamentarium in combating the condition. To very small children it is given in the dosage of 1 drop to 2 teaspoons of water, every 2 hours, and to larger children in 1 drop doses three or four times a day.

A very essential part of the treatment consists of the relief of the pruritus. Warm baths with the admixture of borax or oatmeal to soften the water are of value. Because of their warmth and moisture causing itching, salves are of little value. A soothing lotion consists of lime water, zinc oxide, and a little alcohol.

It is a good policy never to tell a nervous woman that she has a floating kidney, unless the trouble of which she complains is directly attributable to it. If her mind is once drawn to this condition she is likely to ascribe all her symptoms to its presence and develop a neurasthenic state, from which nothing short of an operation will rescue her.

As suggested by Dr. E. P. Davis, discomfort from silk or catgut ligatures in perineal operations may be prevented by bringing the ends of the suture within the vagina. The stitches can be gathered and held in place by a superficial stitch.

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The demand for professorships of dietetics is now heard so often, and the need is so acute, that it would be well for our medical colleges to take heed. There is no branch of physiology or therapeutics in which so much nonsense is put forth in the name of science. Luckily the absurdities are mutually destructive and no particular injury results except to those who go to an extreme in their ignorance of the opposite theory. There is some evidence that even physicians do harm occasionally, though it is to be confessed that when two practitioners have equal success by opposite methods of dietetic management, a special diet may be of very minor importance, at least in that particular disease. The utmost necessity for keeping up nutrition in the wasting diseases, particularly the self-limited infections, raises the suspicion that if we are guided by a baseless dogma, the patients may still unnecessarily die of exhaustion as was the rule before we learned to feed fevers. Food should be given to the limit of a greatly weakened digestion, and we must be informed what articles will afford the most nutriment for the least effort. We must also be informed as to whether it is not really necessary to give predigested foods in every illness to avoid intestinal autointoxication from undigested foods, even though they are given in minimum amounts.

More dietetic knowledge is imperative.

For instance, there is no doubt that in cutting down the diet to avoid indigestion we not infrequently cause loss of immunity from undernutrition and the hope is often expressed that in time we will learn how to keep a fever patient as well nourished as before he became sick, so that when the disease is over, the period of convalescence to regain weight will be practically eliminated. That is, so much is to be learned before we reach a perfection of management, that only a specialist can work out the details and teach us what to do. At present when we find capable men advising only milk in a certain condition on account of the dangers of meat, and others declaring milk to be so highly dangerous that only meat should be given, it is quite evident that something must be done and soon. There is either an unknown factor in each case or illogical reasoning, to be cleared up by special investigations. Not only the sick may be mismanaged, but the healthy may be inviting serious disease by following any one of the innumerable fads now so fashionable, that of nitrogen starvation for instance. If a physiologist specializes on foods he may be dangerous unless his theories are confirmed by the therapist and pathologist, so the dietetist must harmonize them all.

"He Fed Fevers" was the epitaph chosen by Graves in the first half of the 19th century, and the medical profession is just beginning to have a full realization of this great truth. We doubt whether Graves himself fully understood it, as the diet he used was really starvation, although an immense step in advance. The subject was thrashed out in the Section on Practice at the 1909 meeting of the Amer. Med. Ass'n., following a paper on "Diet in Typhoid" by Warren Coleman of New York City (*Journal A. M. A.*, Oct. 9, 1909). It is certainly splendid work here reported. Cases come out of the fever with scarcely any loss of weight and sometimes heavier than ever! What is more satisfactory still was the discussion which showed a general tendency of the profession to keep up the nutrition of patients even if we must administer predigested foods. Coleman shows that with plenty of milk, cream, eggs, sugar of milk, and a bit of toast with as much butter as the patients wanted, he had practically no mortality, for his only death in 46 years was an ambulatory case, almost moribund on admission. This paper is of prime importance for it shows that even with our old desire to nourish patients we were afraid to go far enough, and that many of them really died of starvation. The point of the matter was not even alluded to in the discussions;—the necessity of keeping up nourishment *in all diseases*. When we are gathered to our fathers we hope we will have earned an epitaph which reads:

He Fed the Sick.

Professor Irving Fisher's dangerous advice as to low nitrogen in tuberculosis is a matter which should be vigorously

combated by the medical profession. He has collected statistics from numerous sanitariums showing that the patients take anywhere from 370 to 1200 calories of proteids, and yet without a particle of evidence as to the relative results he dogmatically asserts in a recent pamphlet that the needful amount seldom exceeds 300—and this in spite of the overwhelming mass of evidence that nitrogen starvation is often if not always a leading factor in susceptibility and that good nutrition is a cure. The abandonment of forced feeding beyond the capacity of digestion has been general on account of the autointoxication from masses of undigested food in the intestine, but his suggestion that all forced feeding be given up should not be listened to, except to show its falsity—and by forced feeding we do not mean stuffing or administering beef by a stomach tube or anything else so absurdly unnatural—although they have produced good results—but we do mean tempting the appetite with a good generous diet as advised by the most successful institutions and physicians in general practice.

Dangerous Dogmas. Fisher properly calls attention to the unscientific custom of following current habits, but that is the error of the low nitrogen faddists when they quote the dietaries of notoriously underfed peasants and coolies. Though he is dogmatic he calmly states that it is "unscientific to follow dogmatic opinions of authorities," and then he gives the dogmas of other men to back up his own. We thoroughly agree with him that "no science ever made progress which centered on opinion," and the science of tuberculosis dietetics must ignore his opinions. Some of the greatest medical advances have been

made by laymen like Pasteur, but Fisher should follow his example by digging out facts first and then forming his opinions later. By reversing the method he may do infinite harm to those foolish enough to believe him in preference to physicians. It is rather amazing for him to express surprise that some institutions still use alcohol, as there are plenty of practitioners of the highest eminence who have proved that it is often if not generally useful,—sometimes in rather large amounts, particularly in fever. But as to diet let us remember that tuberculosis is a fever and that we must feed it.

Dietetic fallacies are beginning to receive deserved attention from serious medical journals, and this is a matter for universal congratulation as it is time to separate from the real science the innumerable fads which have fastened themselves upon it like parasites; they are not even excrescences. The illogical ideas of fad-dists who have no legitimate proofs of the truth of their absurd theories are all too frequently put out as scientific. Now that the feeding of the sick is coming back to sensible lines after centuries of following false gods, let us tell the healthy man also to keep up his nutrition to the maximum with the materials Heaven provides.

The dangers of excessive light are being recognized with deplorable tardiness in northern Europe, but that is to be expected in the darkest and cloudiest part of the world. The amazing thing is the American failure to see the same phenomena here in greater degree where we have far more intense sunshine and more

of it. Hyde of Chicago years ago showed that the constant irritation of the skin was one of the causes of epithelioma, which was far more common in the least pigmented types of migrants in sunny lands. Then Wilfred Watkins-Pitchford showed the same facts even in the British Islands (*Brit. Med. Jour.*, Aug. 21, 1909). The dangers of sun baths have been known in America for several years, and the German profession has scoffed at the facts, but now comes Grawitz (*Deutsche Medizinische Wochenschrift*, Aug. 19, 1909) with dreadful accounts of the injury of sun baths to the naked body, not alone the well known painful dermatitis, headache, fever and malaise, but cardiac irregularity and acceleration, high tension, accentuated second sound, increased dullness, even valvular murmurs and some cases of cardiac failure and collapse. Curiously enough it is a German physician in New York, who advocates sun baths to the naked body in tuberculosis, though as a matter of fact he has not published any proof of their value even in moderation. Sick people are not benefited by total darkness, except in a few cases of neurasthenia where a darkened room at midday is known to be soothing, but that is no reason for excess. No one dreams of poisoning a case with strychnine if a little is found good, nor of omitting it altogether because some have taken too much. Luckily other New Yorkers are aware of the facts and it is comforting to see that Jacobi mentioned at the last meeting of the American Climatological Association that even cases of pneumonia must have "no excess of light." Perhaps in the proverbial twenty years the rest of the profession will give up their sun worship.

The trained nurse without judgment is about the most dangerous bit of femininity with which the medical profession must contend. She may be well meaning but do the exact opposite of what she should. She may be quite learned but her very knowledge may lead her to believe she knows more than the doctor. They all talk, more or less—they would not be women if they did not,—and those who talk most get into the habit of thinking aloud which is as bad in sickness as in diplomacy. Doctors and nurses must always think of possible dangers and talk to the patient of the favorable side. Only in cases liable to be fatal is the patient to be informed and then only after very careful consideration and consultation with the family. The very worst charge which has been brought against the trained nurse is the unconscious way she may undermine the physician's influence by remarks as to different management of former cases under someone else. Indeed it is quite human for her to believe that her first instruction was correct and all subsequent changes in method deleterious. For these reasons, and a bushel of others, we still hear bitter complaints about the modern nurse, and in spite of the fact that she is here to stay because indispensable. The lay press has given unwise publicity to a few instances in which a nurse has reversed the doctor's orders, particularly in institutions which have foolishly given too much authority to a head nurse who is really practicing medicine without a license. Such instances will occur now and then until we all become superhuman, but the checks being devised to prevent injury from lack of judgment will reduce them to a minimum. There is no cause for alarm now that the management of the sick is

reaching a state of perfection undreamed of fifty years ago, or even thirty years back.

Loyalty to the physician in charge is the preventive of the vast majority of the complaints against the trained nurse. It is the reason why many physicians insist upon the employment of certain nurses who have been tried in the balance and not found wanting, and why so many of us dread the appearance of some stranger who happens to be out of a job. They may not understand what the doctor is about, but they should realize that they are not expected to know. When they find a change of symptoms which may modify treatment they do not act on their own responsibility until the physician is informed, unless of course it is a critical emergency, and that is why she has been trained. That is where she ceases to be a machine and become a thinking creature with knowledge. We are quite of opinion that when trained nurses fully realize that their bread and butter depends upon loyalty, they will simulate it even if they do not feel it, but the point of the matter is the suspicion that training schools are drifting a wee bit from their original position of teaching the student her absolute dependence upon the physician. Has not the extension of the courses and their inclusion of so much medical practice, created a slight feeling of independence or rather of partnership? It is a matter for serious consideration at least. There may come a time when nurses will demand legislation which permits them to assume charge of minor ailments and midwifery—a system which works fairly well among the poor in many parts of Europe, though the practitioners are not called nurses. We might as well think of where we may be drifting now that there

are so many millions who cannot afford a physician. Some of them may be so independent that they would prefer to hire a nurse rather than become paupers. Until that long distant day, let the nurse be taught her duty of loyalty to and dependence upon the responsible physician in charge.

Beri-Beri and scurvy are being linked together so often in the discussions of these two mysterious diseases, that the relationship is quickly assuming importance to all physicians even in parts of the world where the two affections are never found. Both conditions have long been assumed to be some sort of autointoxication from defective nutrition. The Japanese navy eliminated beri-beri simply by increasing the nitrogen and this seemed to settle the matter, particularly as the disease rarely if ever attacks the wellfed. Then the evidence of some infection, probably protozoal, became so strong that it was suspected that the Japanese results were really due to improved sanitation. The pendulum is now swinging the other way, and investigators are sifting the evidence that some other element is deficient, potassium for instance, and are backed up by the curious reports that sometimes scurvy and sometimes beri-beri follows the same conditions. Yet still the search for a living cause or its toxins is kept up by reason of the fact that tropical natives, using "cured" rice which is sterilized in the hull, rarely get beri-beri, though some cases are reported. The nerve symptoms are so allied to those following poisoning by the metals, alcohol or diphtheria toxin, that it is difficult to get away from the idea of a living cause. Whatever theory is taken up, there are apparently contradictory facts. The mystery will be

cleared up by a very simple discovery sometime, but at present the dietetic evidence is so strong as to raise the suspicion that there are numerous allied nervous or hæmic conditions due to feeding fads. It is well therefore to keep in mind the possibility that a regulated liberal diet may restore to health many a patient for whom we are put to our wits' end to find an appropriate diagnosis without resort to the thread-bare blanket neurasthenia now being discarded for psychasthenia.

The male climacteric deserves a great deal more attention than it has been given. In the minds of most of us the period known as the "change of life" is associated exclusively with the physiological life history of the human female. The menopause and the climacteric have been looked upon as identical and the essential limitation of the first to the female has precluded any thought of the second having any other significance. Recently a French physician (*De Fleury, Bull. de l'Académie de Médecine*, Dec. 21, 1909) has directed attention to the occurrence of a neurasthenia in men approaching fifty, characterized by metabolic depression, autointoxication and markedly lowered vitality. De Fleury has studied a considerable number of cases—201 to be exact—and emphasizes the unquestionable physical basis of the presenting symptoms. Psychologic phenomena are not wanting, but they are subordinate to the physical condition, for they do not respond to psychotherapy but do clear up as the nutrition is improved. The exact nature of the underlying cause is not entirely plain, but De Fleury seems inclined to attribute the whole condition to insufficiency of the thyroid, an opinion further sub-

stantiated by the fact that he has derived conspicuous benefit from the careful administration of thyroid extract. All this is most interesting, not only from the standpoint of the clinician and therapist, but also from that of the psychologist. The all important detail is the actual determination of a male climacteric. Its definite recognition and the apparent discovery of its true physiologic basis will aid most substantially in the management of many a case that too often in the past has been lightly dismissed as "nothing but neurasthenia."

The "change of life" has long filled an important place in the diagnostics of medicine. Likewise it has long been the extenuating factor in every caprice or temperamental outbreak of women of the fifth decade. Is there a physician who has not been ready, when no other reason presented to attribute every malady from hallux valgus to alopecia areata to "change of life?" And when Miss Clementina Jones, spinster, goes to church and faints most unseemly during the services, although her age is unknown, there are always plenty of good sisters ready to whisper their suspicion that "Clementina's climacteric" is responsible. If Mrs. Brown gets into a family jar with her lord and master, and has a good old fashioned hysterical fit, the young physician who is hurriedly called, asks a few questions, learns Mrs. B. is forty-one or two, and straightway sapiently advances the opinion, "'tis the change of life." Mrs. B. learns the formula and henceforth claims the privileges of a confirmed invalid, a chronic "change-of-lifer." Mrs. Smith, her next door neighbor is a gourmand and like the majority of those who live to eat, has vague pains everywhere, but especially in her much abused stomach and bowels.

One talk with Mrs. B. and although her age she does not disclose, she promptly concludes that to the "change of life" her aches and pains are entirely due. Then, there is Mrs. White. This lady visits the leading stores and is so impressed with what she sees that she fills her shopping bag with souvenirs. The store people when they learn of it, fail to appreciate her taking ways and characterize her skill in collecting beautiful things, in the most vulgar terms! She is taken into custody, and then Mr. White appears on the scene, satisfies the aggrieved store people and explains that Mrs. White is not responsible owing to the mental unbalance occasioned by her "change of life." And so it goes. Up to now fair woman has enjoyed the "change of life" as exclusively a prerogative of her sex. Alas, it is so no longer. Man, who has so long been obliged to carry the full burden of his temperamental and other peculiarities without the slightest excuse or extenuation can now take refuge behind a climacteric of his own. Did he come home last night and place his boots on the piano and persist in singing the Marsellaise? It was nothing but the medicine prescribed to assist him in passing through his "change of life." Did Mr. B. lose his collar button and his temper at the same time? Simply the mental irresponsibility coincidental to the change of life. Is Mr. C. a staid middle aged man of a family—seen dining with a member of the chorus? Nothing to it, simply a case of dual personality. Mr. C., poor man, is suffering from an insufficiency of the thyroid which from time to time invests him with a personality that carries him irresistibly to Broadway—and its joys. These apparent lapses are never remembered by Mr. C. when he reverts to the authorized version of his life. Mrs.

C. knows all about it, of course, and rightfully attributes it to his defective thyroid.

It will be extremely gratifying to the profession that we can now understand and explain so much that has hitherto been shrouded in mystery. If the male climacteric proves as useful and convenient as the analogous state in the gentler sex, there will be no reason to complain. Excuses and extenuation are rare enough, Heaven knows, for the deflections of mankind, and if the medical profession has another new one that will hold water, our suffering brothers will "rise up and call us blessed."

Is dishonesty innate or acquired? Here is a question that is bound to bother both the sociologists and psychologists. Is moral depravity the natural state of the human mind, and are honesty and the other manifestations of moral uprightness simply products of education and training? It is pretty hard to say. One thing is certain, the more one studies this proposition, not only as a problem of psychology, but as a problem of practical every day life, the more vexatious does the whole question become. The old saying "honesty is the best policy" is a cold blooded statement and gives little comfort to those who would like to believe that honesty is instinctive, and dishonesty nothing but the perversion of the natural moral state.

It is not pessimism, nor an evidence of dishonest tendencies to raise this question, and more than one thinking man who is brought in close contact with many other men and their affairs will occasionally search his mentality and ask himself, "what is honesty?"

Is it education and training, or is it a product of civilization, something that man has evolved for the protection of himself

and his belongings? Let those answer who can. The whole matter is relative, for the values are as variable as people. Standards are constantly changing and the honest deeds of yesterday may be the dishonest acts of to-morrow. No better illustration could be brought forward than the sober statement of an honorable gentlemen concerning the recent grave scandals at Albany. He never denied the giving and taking of bribes to kill legislative bills, but simply said "it was the custom at that time, *and nobody looked at it as we do nowadays!*"

Within the last few years there has been a notable moral unrest among all classes of people and the resulting investigations in politics, railroad and insurance management and countless other fields of activity have shown that our most honorable and honest citizens have been guilty of acts that in their ultimate analysis seem questionable if not actually criminal. To a goodly proportion of these men, an accusation of dishonesty would have been an insult. If they as insurance presidents maintained expensive lobbies and paid for legislative protection or immunity, they were but serving their policy-holders, the widows and orphans. If as directors of railroads, they gave rebates and protected themselves in diverse ways against legislative brigandage, they also were but safeguarding the interests of their stockholders. And so it went all down the line. The people kept certain men in office because they "made good" in serving their constituency, individually and collectively. The office holders traded their votes on railroad, insurance or other matters, for patronage, a liberal portion out of the "pork barrel," or a few more pensions. The main consideration in looking at the proposition is that

no one questioned these transactions. It was the custom; no one expected anything else. As a man who is respected and admired by every one who knows him, recently said, "Nobody thought these things dishonest, until somebody said they were and then everybody knew it." It was the manner of looking at these various matters, in other words purely a question of education. No reasonable, fairminded man can believe for a minute that many of those who were the most flagrant offenders realized that their acts were wrong and dishonest. Most of them were men who prized their honor, reputation and record of success high above everything. They were good husbands, good fathers and worshipped their families. They would have died cheerfully to save one of their loved ones from harm or disgrace. Is it likely that they would have knowingly and intentionally exposed those whom they loved to dishonor? The game wasn't worth the candle.

Honesty is largely a matter of education and training. This does not mean, however, that we are naturally dishonest any more than that we are by nature immoral. Children are just *immoral* and by the same token just *unhonest* if we may be pardoned this etymologic atrocity. In a state of uneducated mentality, human beings are, therefore, neither honest nor dishonest. A study of primitive people as well as of the developing child proves this fact conclusively. Honesty in its primary or preliminary stages is simply social reciprocity. As the social organism becomes more complex, honesty likewise extends. While in the beginning it is of the nature of a comity between individuals, in its more complicated phases it takes on obligatory features.

Thus custom, usage and the law, give honesty a prominent place in the social scheme, and the average individual acquires a modicum of honesty if he never has a day of teaching. This, however, is the exception and few there are to-day who do not receive more or less schooling. There are three great schools, where man is given his education in the principles and practice of honesty—the school proper, the home and the church. These have collateral branches of more or less value. All vary in efficiency, so it is not surprising that many well meaning individuals vary in their knowledge and practice of honesty.

But here is the bright side of the picture: every day sees extension of the principles of honesty. Education is doing it. Dishonesty is decreasing and the day is not far distant when there will be but one standard of honesty, a standard which every man will know, and knowing, practice.

Again the anti-vivisectionists are making the welkin ring with their false claims and accusations. So loudly and viciously have they made their attack on certain scientific institutions, notably the Rockefeller Institute of Medical Research, that Dr. Simon Flexner has actually been driven to make a public reply. It is a shameful state of affairs when men of Dr. Flexner's attainments and standing have to defend their work for humanity against the faddistic outcry of comparative non-entities of achievement—or anything else. It makes one's blood fairly boil to read the ravings of the mental myopes who consider the discomfort and suffering of a ridiculously few animals, of far greater importance than the welfare of countless human beings. When one thinks of the

great discoveries of medicine that would have been impossible but for animal experimentation, and of the wonderful progress of surgery made possible through the same agency, the hysterical objections of the anti-vivisectionists seem as nothing else than the products of unbalanced, if not perverted minds.

The writer yields to no one the possession of a greater love than his for dogs and other animals. He has known the genuine affection of more than one noble beast and treasures, as not the least of the things that make life worth while, frequent companionship with several intelligent dogs and horses. A person who from circumstance or non-inclination has never enjoyed such associations has been denied much. But in spite of this inborn love for animals and the anguish that has ever been felt at their slightest suffering, the writer would willingly sacrifice every dog or other animal that could become the slightest possible factor in aiding to solve any problem of medicine or surgery; the needs of the human family transcend those of every animal ever created. As a matter of fact those whose work legitimately calls for animal experimentation, never abuse their opportunities, and those who practice vivisection illegitimately, can be adequately restrained and punished by existing laws.

The anti-vivisectionists may be only terrible examples of how far astray good intentions wrongfully directed will carry the simple and thoughtless. But if the people who are carrying on this ridiculous movement do accomplish their avowed purpose, it will be a sorry day for scientific research. It would seem about time for medical men generally to make themselves heard on this vital matter.

Woman Suffrage.—"Once, and that not so long ago," said a cynic, "women—God bless them—were our superiors: now, they are our equals." Alas, "'tis true, 'tis a pity, and pity 'tis, 'tis true," and fair woman once the guiding star of man's loftiest aspirations and dreams, is doing her best—or worst—to win the empty privilege of the franchise. Wifehood, motherhood and all the lovable attributes of her sex count as nothing in the hectic struggle to force man—the erstwhile brute—to give her the right to vote. And the loud and vulgar mouthings, the protestations, accusations and threats, the shrieks of derision and the bursts of anger, in truth cause many a man to pause and wonder. Can this thing be? Can womankind have journeyed so far? And in the hidden chambers of the mind, memory mayhap conjures a lullaby, the crooning of a mother, with its burden of love and devotion. Pictures come and go, leaving naught but the dearest memories of the woman our boyhood knew. She sought no vote, for her the ballot box held no charm. The home was her field of activity and the fulfillment of her sacred place as wife and mother met her every desire. Her keen realization of the physical limitations imposed by her sex, her appreciation of the part God gave her in the Plan, and her delight in giving to her offspring the best that was in her, left no desire nor time for fads and foolish ambitions. She was a woman, sensible of her opportunities and proud to fill them according to her conscience and her ability.

Who shall say that her influence in her home and on the lives of those who looked to her for love, guidance and sympathy was not greater than it ever could have been in the ruck of the political arena?

Somewhere we ran across these crude little verses. The poetry may be questionable, but the sentiment, ah, the sentiment is the thing;

"A wholesome smell of bread, new baked:

The spinning-wheel's low hum;

These with an hundred homely tasks,

Make of her day, the sum.

Yet search the whole world thro' and thro',

Her happiness to match,—

Her drowsy babe upon her breast,

His hand upon the latch!"

A lovely face, flushed with exertion but happy in the sheer delight of motherhood and the toil of the home, somehow or other fits into the picture. Would the privilege of the ballot add one jot or tittle to the happiness of the mother or lighten ever so little the tired steps of him who lifts the latch?

But woman, lovely woman wants to vote—at least a strenuous few of her sex do—and seeks to become a unit—or is it a numeral—in the political sum. Oh no, it is not our mother or our wife, or your mother or your wife who are making the fight. They do not care to vote, for they have something better to do. So what's the use of worrying. If there are a few "new" women who insist on voting because,—well just because—why not let them do it? The price they pay for the empty bauble of being counted in the returns from "de fif' ward"—if they are "in right"—is a price that may leave them poor indeed.

thus compel us to resort to a system of drains to carry off the rain water, for though such drainage carries with it the washing of streets, they are not so dangerous as sewage and would be almost harmless if the streets were properly cleaned. The house wastes could then be disposed of at reasonable expense, and our rivers would become so clean that the filtration would be much cheaper and perhaps effective in securing perfectly safe drinking water, though the time when filtration can be omitted will probably never come.

Federal control of stream pollution

seems to be a future necessity, for no community will go to the expense now demanded unless compelled by a higher power. Such an evolution of national sanitation is freely predicted, for it is said that no city should be permitted to pour its sewage even into the ocean, to be a nuisance to the coast dwellers. Much less should a bay be so-used. New York City has so befouled the harbor as to have seriously injured the property and lives of its neighbors. Indeed the condition of those waters is a disgrace to civilization. Not only are the fish and other sea foods being exterminated in this and other harbors, but it is now unsafe to eat raw oysters because so many of them are "fattened" in typhoid sewage direct from the water-closets. Surely the time is ripe for a house-cleaning. And yet there must be new laws, for the Supreme Court practically decided that by present laws the City of Chicago had a perfect right to dump its filth on other communities, although the case merely raised the question as to whether St. Louis got some of the sewage. As this point was not proved, St. Louis had no redress. Cities higher up stream no doubt have a real grievance but not enough money to force the issue. Chicago can ignore the rights of weaker neighbors.

A double sewer system is the inevitable result, if present day discussion continues in its present trend. Every city must be compelled to adopt one of the modern systems of sewage disposal, but the entrance of rain water into the sewers makes the volume of fluid too great and the cost prohibitive. The matter of expense may

ORIGINAL ARTICLES.**A FURTHER REPORT ON THE SURGICAL TREATMENT OF EPILEPSY;
NEW METHODS AND POSSIBILITIES OF BRAIN SURGERY.¹**

BY

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At the last meeting of this Society I reported the results of twenty operations for epilepsy; nearly all cases of long standing, not traumatic, having several seizures a day at the time of operation. All but one were benefited and at that time five of them had been cured for three or more years. I may now add that none of the five have relapsed, though one died of pneumonia nearly eight years after operation; the remaining four have now been free from epilepsy four or more years; the longest period being ten years. Another case has now gone three years without recurrence, making six cases out of twenty that may be called cured.

Another case overlooked, and accidentally omitted from my first report, recently came to my office for some minor trouble and reported herself well after more than two years. One extremely bad case remained well for one year and five days; then had a few mild seizures and has since been well, two months to date. During the past year I operated upon two more and refused to operate upon about twenty mild cases that I did not feel warranted in exposing to operation in the present state of our knowledge. These cases will

be reported later. One I will briefly sketch.

A colored boy, 12 years old, developed epilepsy after an attack of typhoid fever. He had been treated medically in a hospital and circumcised without benefit. He was rapidly getting worse. At the operation he was found to have a well marked and very extensive chronic meningitis, with adhesions between the pia and dura as far as could be seen. These adhesions were separated with the finger, over most of the left cortex and in the longitudinal fissure. Last Thanksgiving day, three weeks after operation, he ate a very heavy turkey dinner and then stuffed himself with oranges and bananas. He promptly went into status epilepticus for 24 hours, but recovered and had no more seizures for the two weeks more that he remained in the hospital. Since going home he has relapsed and this case must go as a failure; and yet he showed so much temporary improvement that I feel he might have been cured could he have had a long course of proper diet and hygiene.

When we remember the advanced stage and severe type of these twenty cases, that they were with few exceptions not traumatic, that six out of twenty may be called cured and at least six more greatly improved, it seems almost too good to be true. I can only say that these are facts that will be vouched for by many of my associates who saw the cases before and after operation. It may be mere coincidence or it may be, as a distinguished alienist said to me after personally examining some of these cases, that there is something in it. At least I think these results justify a further trial of exploratory craniotomy *when other measures have been found inefficient.*

There is still a very general belief that idiopathic epilepsy cannot be cured nor even improved by such operations. But this belief is not founded upon any extensive observation since improved surgery has made such operations safe.

¹Read before the Southern Surgical and Gynaecological Association, Dec. 17th, 1909.

It is only within the past few years that anything more than simple trephining was safe and few surgeons have attempted these operations since then, because they have regarded them as hopeless except in recent traumatic cases.

The epileptic habit has been a serious stumbling block, but is one that ought now to be removed. There is no such thing as the epileptic habit *per se*. The continued attacks are the result of a lesion. And if the lesion can be cured or removed the attacks will cease. The length of time that seizures have been occurring has

toxins from the alimentary tract, or by some peripheral irritation, the brain finally suffers, and becomes distinctly abnormal even in its appearance to the naked eye. In *all* my cases marked lesions, *gross* and *microscopic*, were found.

Even after removal of a peripheral cause if it has existed long enough to produce a brain lesion, the seizures will continue. Hence the so-called epileptic habit. It would appear also that simple exploration of the brain in many cases benefits or cures the cerebral lesion; but, if a peripheral cause be still active, a cure of the epilepsy

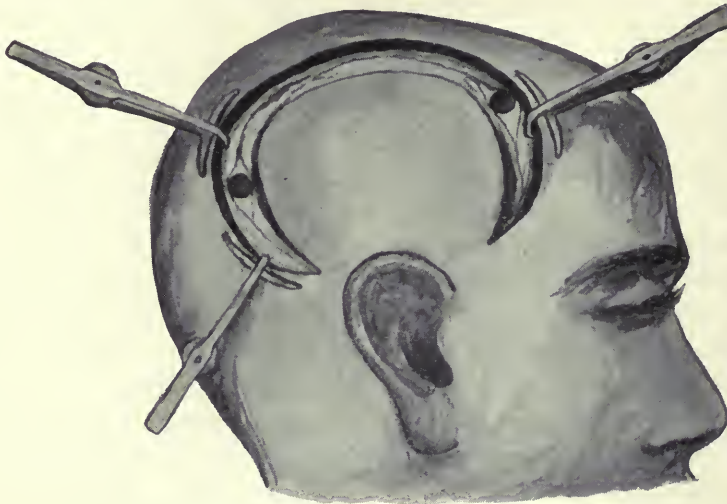


FIG. 1.

nothing to do with the prognosis in cases coming to operation, except that the lesion may be more extensive. This may seem heretical, but several excellent authorities now entertain this belief. In conversation last winter with Dr. Spratling I found that his ideas coincided with my own in this respect, and there is probably no one better qualified than he to express an opinion upon the subject.

Whether epilepsy be caused originally by a brain condition, or by absorption of

will not result. If both conditions, however, can be cured, we may expect brilliant results. I have no hesitancy in saying that this may possibly be done in a considerable proportion of cases, even where two or three causes are operating. I consider the subject still *sub judice*, but my own experience has been so encouraging that I wish to stimulate others who are competent, to take up this work, especially those whose opportunities are greater than my own.

Leaving the subject of epilepsy, let us consider some of the possibilities of brain surgery with the improved methods of the present time. The method of making large osteoplastic flaps has done for brain surgery what the Sym's speculum did for gynecology.

familiar with these things is likely to overlook serious lesions or mistake their significance. And one not particularly familiar with safe methods of examination is likely to fail in discovering even such gross lesions as tumors, abscesses or clots; or, on the other hand, to do serious dam-



FIG. 2.

My own experience has taught me to enlarge the flap from time to time, until there are now few parts of the brain not accessible to safe examination during a single operation. I have found it comparatively easy to examine nearly a whole hemisphere. I do not wish to encourage

age to some vital part. While one soon learns the appearance of the normal brain in trephining for fractures and similar work, it is only by comparing gross appearances with microscopic sections that diseased conditions may be familiarized. I have found it of the greatest value in all

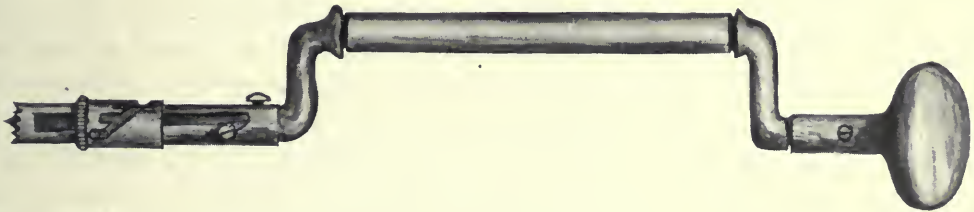


FIG. 3.

reckless exploration, nor brain operations by inexperienced men. In no branch of surgery is a thorough knowledge more essential, not only of anatomy and physiology, but of pathology. One should be especially familiar with the touch and appearance of living brains, both normal and abnormal. And both the touch and appearance of the living brain are very different from those of the cadaver. One not

abnormal conditions to remove small portions for microscopic examination. And it was only after numerous examinations of this kind, of living brains, that I began to feel any assurance of recognizing the true significance of the abnormalities most commonly found, and learned to appreciate differences in the feel of normal and some abnormal conditions, both to the finger and to the probe or grooved director,

which is the best instrument for exploring the brain. The osteoplastic flap is the method *par excellence* of opening the skull. Much loss of bone is to be deplored.



FIG. 4.

With increased experience I am making flaps larger than ever, especially where no definite location of a lesion has been made, and I have gradually developed a method of opening the skull and some instruments that I believe are of value in saving time and preventing shock and hemorrhage. My plan is to place the patient upon the operating table before anesthesia is complete, make the final preparations and mark out the proposed flap upon the skin while it is being completed. The base of the flap should always be toward the blood supply and considerably narrower than the middle. A small incision is then made in the skin and one blade of a long clamp passed under the base of the flap in the loose tissue between the skin and the periosteum and closed tight enough to check bleeding from the flap. The outer blade of this clamp should be covered with rubber. It must not crush the scalp nor remain on too long. Safety pins may be used or a long pin with a rubber figure of eight.

The flap is then cut with one sweep of the knife through skin and periosteum—one careful sweep—not a slash. The concave edge of the incision is rapidly loosened and special clamps applied to stop bleeding. These clamps are an invention of my own and by a glance at the accom-

panying diagram their structure and use will be easily understood.

They are easily applied, effective, out of the way, clear of the operative field, and not dangling across it as does the ordinary haemostat. A few haemostats or clamps may be required on the flap proper as the clamp across the base does not perfectly control hemorrhage without too much pressure and crushing. After the bone flap is turned down, this pin had better be removed and any number of haemostats required may then be applied to the edge of the flap and will be out of the way.

For boring the skull I use a small trephine fitted with a handle like a brace and protected by a guide which regulates the depth to which it will cut. This trephine may be fitted to any brace, cuts very rapidly and safely a hole 5-16 inch in diameter. There is advantage in the small opening and the rapidity of boring, as several openings may be made and the cutting of the flap with a De Vilbiss craniotome facilitated.

I have found no instrument that will do the cutting so rapidly and satisfactorily as a good De Vilbiss, provided we do not try to cut too far away from the trephine hole. Two holes will do, but three or four are better in a large flap. The base of the bone flap is made narrow so that it will be certain to break in the proper line, and break easily.

The saving in time by the use of these instruments is very considerable and the control of hemorrhage almost perfect. These are important factors; more important, I believe, than is generally thought to be the case.

With a large flap in the parietal region the greater part of the motor sensory area

is exposed to view and a finger can be passed under the skull and carefully swept over the surface of the brain from the anterior frontal to the post-occipital lobes, and down under the base in the middle fossa and over the tentorium. The falx cerebri may be palpated almost from end to end and all this may be done without injury because the large opening allows a partial displacement of the brain and makes room in the skull cavity for the finger.

No cortical clot of any size on the side of the opening can escape detection by such exploration and deep-seated clots in the brain substance or ventricles can often be detected by the tension which they cause and by the lack of pulsation over them. I have even been able to detect a tumor situated half inch from the surface by the sense of resistance to touch. Careful exploration of the brain substance with a grooved director does no harm if properly done, and may be used with considerable freedom. The blunt end of the director will not tear blood vessels nor cause much laceration of nerve fibres or cells, but will push these structures aside and separate them without injury.

The exploratory needle with a sharp point is dangerous. It may puncture large vessels and is useless because it does not evacuate thick pus nor give an altered sense of resistance in meeting abnormal tissues. Even the finger may be introduced into any part of the lateral ventricle with little damage to brain tissue, if it is carefully worked in through one of the deep fissures that reach nearly to the ventricle, after making a small opening with some blunt instrument such as a haemostat. I have done all these things in a considerable number of cases

and had the patients recover, and recover easily without symptoms of shock or other serious disturbance and with less nausea and general discomfort than follows an ordinary laparotomy. Nor have there been any sequelae in a dozen cases followed up for 3 to 10 years.

Quite recently I removed a large clot from the middle fossa which was lying against the side of the pons. The patient regained consciousness, recovered from his paralysis, was comfortable and apparently well on the way to recovery two days later. Unfortunately he then developed a rapidly fatal double pneumonia. Leaving out cases of severe injury to the head, I have had no deaths following this extensive exploration, and in a dozen cases done several years ago there have been no sequelae. None of my epileptics died, none appeared dangerously ill after operation and in at least three of them the most extensive exploration was made.

It may be said that cerebral lesions should be located before operating, but in practice this is often impossible. The most careful localizations by skilled neurologists have often gone wrong, and in cases of severe traumatic hemorrhage there is no time for elaborate methods. But even when we feel sure that a lesion is pretty definitely located it is necessary to recognize it by touch or sight before it can be removed and this often requires experience and thorough knowledge of pathology as well as of technique. Many lesions become practically accessible and discoverable only by the large opening and thorough training of the operator. With the possibilities now before us, however, there seems no reason why the field of brain surgery should not be much enlarged. There is now no reason or excuse for al-

lowing patients to die of large clots following injury or following fractures of the base of the skull. Even if these clots cannot be located, they cannot often escape detection at the operation; and if not complicated by multiple lacerations and multiple small hemorrhages, recovery will usually follow their removal. The same thing is true in large measure of cysts, abscesses and tumors. Further experience may show us that many insanities and epilepsies and certain types of meningitis may be cured by cerebral surgery. Certainly it would seem that purulent meningitis, not benefited by serum, spinal puncture or other means now in use, should be directly drained through the skull; and it is not impossible that some cases of tubercular meningitis may be cured by simple opening and draining as are some peritoneal infections of the same kind. With more knowledge much may be done that is now considered impossible and even now I think exploratory craniotomy by competent operators is as justifiable as exploratory laparotomy in many obscure cases.

TUBERCULOSIS OF THE PERITONEUM, UTERUS AND ADNEXA.¹

BY

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Tuberculosis of the female organs of generation, associated often with the same affection of the peritoneum, occurs with sufficient frequency to call the attention of the profession generally to it as an important factor in the causation of the various symptoms for which women seek their family doctor for relief. Inasmuch as

the subject of tuberculosis is at the present time uppermost in the minds of the laity, as well as of the medical profession, and every effort is being made to find some means of stamping out the great white plague, it ought not to be out of place for the Brooklyn Gynecological Society to spend a little time in considering the ravages of the disease on the women who come under the notice and care of the gynecologist.

Can we not find some way of recognizing these cases sufficiently early to enable us to use the proper remedy for radical cure, or in inoperable cases, give the kind of attention which will arrest the progress of the disease and prolong the life of the patient? Up to the present time the majority of these cases have been recognized only at autopsy or when operating for some other form of pelvic trouble, or on exploratory incision for diagnostic purposes; some few having been recognized as such previous to section. Many cases even after opening the abdomen have in the past been overlooked,—as in some stages of miliary tuberculosis where the tubercles are all microscopic in size, or in the early stage of the chronic diffuse tuberculosis in which the gross appearance presents nothing striking to the naked eye which would differentiate it from inflammation from other causes. But by more careful observation and with the aid of the microscope in examining for tubercular tissue or for the tubercle bacillus, several observers have shown by their statistics that in salpingitis alone, out of all cases in which the tubes have been removed for all kinds of diseases, 8 to 18% of the tubes proved to be tubercular, an average of about one in seven, surely a statement which should cause us to pause and consider! Again, in

¹ Read before the Brooklyn Gynecological Society, Dec. 3rd, 1909.

500 autopsies at a consumptive hospital 8% had tuberculosis of the genital organs.

The disease may attack any individual at any age but more frequently between the ages of twenty and forty, the period of the height of sexual activity, and more frequently in married women. As to the relative frequency of the organs attacked, 90% are tubal either alone or combined with one or another of the organs. In 40% the uterus is affected alone or in combination. They stand in about this order:

1. Tubes.
2. Corpus uteri.
3. Peritoneum.
4. Cervix uteri.
5. Ovary.
6. Vagina.
7. Kidneys.
8. Bladder.

This disease of the bladder is very infrequent and most usually secondary to a focus far advanced elsewhere.

Etiology.—I shall confine the scope of this paper to the progress and treatment of the disease as it appears in the peritoneum, uterus and adnexa. Tuberculosis of these tissues may be primary or secondary, most frequently secondary, and of the peritoneum it is always secondary either preceded or followed by the infection of the generative organs. The invasion may be from within or from without; if from within it is usually if not always secondary; if from without, nearly always primary. It may be introduced from without by unclean instruments, douche tube, or examining finger, or in coitus with a tubercular male consort, or by perverted sexual gratification with a tuberculous lesbian tribadist or cunnilinguist. The disease introduced by any of these means may fasten itself at any point from

portia vaginalis to the peritoneal cavity, most frequently passing through the lower portions and infecting the endometrium without infecting the other parts in transit rarely extending as far as the isthmus of the tube without infecting the uterus, frequently the invasion stops at the cervix.

From within, and most cases are from within, the infection of the generative organs may be from the peritoneum, or from infected lymphatics, from tubercular ulcer of the intestine which either allows the bacillus to float down to be picked up by the tube without infecting the peritoneum in transit or becomes agglutinated to one or another of the organs and involves it in the inflammatory exudate, or the organs may be involved as a part of a general miliary tuberculosis. All authors speak of the probability of the bacillus being carried to different organs or other secondary foci through the medium of the blood, but I cannot conceive how this can be done except in advanced stages of the disease at some point where the degeneration or ulceration has literally eaten its way through the wall of a good sized vein, pours the bacilli into the blood current and sends them on to principally the liver and kidneys.

One observer, Lasker, examined the blood of 68 cases of advanced tuberculosis and found the blood free from contamination except in one case and that one died in 19 hours after his observation. Nearly all agree in saying that infection from within is usually secondary but may occur as a primary invasion, yet do not explain how it may happen as a primary. The only way I can see is that the bacillus may be ingested with the food in an individual who is free from tubercular infection, pass through a typhoid ulcer or a benign ulceration, float

down into the cul de sac and be picked up by the tubes without infecting the peritoneum.

Any infection from the blood and the lymphatics must be secondary to a focus situated elsewhere from which such channels pass it on.

All authors speak of at least three forms of the disease.

1. Miliary.
2. Chronic Diffuse or Caseous.

3. Chronic Fibroid, and some name seven varieties of tubercular peritonitis alone, an entirely unnecessary confusion of distinctions; they are all one and the same disease and the different appearances are merely different stages of the disease in advancement or arrest of its progress, and that condition known as chronic fibroid or the cicatrized or calcified condition is only nature's attempt to block out or seal up the disease as arrested, which if successful, constitutes a spontaneous cure. I find one or two recent authors holding this view as instanced in Klebb's work on Tuberculosis, in speaking of the classifications: "It is safest to regard it as a widely varying manifestation of one process whose severity and extent are dependent on many factors." And H. W. Longyear, in an article written in 1904, made this statement, "All the varieties are simply different stages, one following the other with greater or less rapidity depending on the power of resistance of the individual. In some the disease may not pass the first stage, etc." In fact, in operating we frequently see both miliary and chronic diffuse in the same case and occasionally all three varieties have been found. I will not enter into the pathology more than to say that at first the invasion is in the form of minute rounded pearl-like tubercles varying in size from

those which can only be seen with the microscope to those of the size of a split pea scattered over the mucosa or serosa, usually situated superficially just beneath the epithelium. At first the tubercles are all invisible to the naked eye, gradually they increase in size as the disease advances, become more elevated and now assume a spheroidal shape of grey translucent color with yellowish white to yellow center and finally becoming opaque. Some of these tubercles contain amorphous granular material, some contain epithelial cells, some pus and others a mixture of all; and frequently numerous tubercular bacilli are found. As the disease advances into the caseous or chronic diffuse condition it invades the membrane, the nodules enlarge and become flattened, irregular ulcers may form with elevated edges which are undermined by the advancing tubercular disease, many nodules break down and coalesce into larger masses and then invade the muscular tissue finally replacing all the physical elements of the organ affected. Or the disease may be arrested at any point in any of these stages of the disease and calcareous or chronic fibroid degeneration set in, calcifying the affected areas or infiltrating or replacing the tissue with a fibrous connective tissue, thus bringing about the spontaneous cure before referred to. The cheesy masses in the actively degenerative condition contain a tubercular tissue composed of a reticulated, delicate and transparent basement membrane which becomes opaque and denser as the disease advances. This membrane contains nodules of indifferently nucleated round cells with occasional multinuclear giant cells and usually numerous tubercular bacilli scattered throughout,—but occasionally the bacillus cannot be demonstrated. If the disease is

active on a mucous surface, the membrane pours out a great amount of cheesy material which later becomes muco-purulent and we have a pyosalpinx or a pyometra according to the cavity affected. If it is the peritoneum which is attacked we may not have an accumulation of clear, turbid, sanguineous or sanguino-purulent fluid.

Diagnosis.—Here comes our trouble. The patient does not walk into the office with a diagnosis ready made for corroboration, nor with the signs and symptoms sticking out—in fact, the early invasion is seldom if ever brought to our notice. Pain which is a most prominent factor in sending the patient to us for other difficulties, is tardy in making its appearance and seldom becomes prominent enough to compel the tubercular patient to ask for relief until much advance has already been made, and may even then be passed over as of no great importance,—but a painful menstruation in any woman with associated inter-menstrual pelvic pain, pain when the bowels move, and with progressive increasing constipation ought to cause the physician to look into matters with the possibility of tuberculosis in his mind, and a thorough examination to be made. In the early stages nothing can be felt by the examining finger, later enlarged tubes, enlarged or irritable ovary may be outlined, yet these are not necessarily indicative of tuberculosis. The cornutubal shoulder like thickening can sometimes be made out in the ascending tuberculosis and helps in making a diagnosis especially if the cervix has been infected on the way up and shows the tubercular infiltration or an erosion. This erosion may be mistaken for cancer but microscopic examination of a piece of the

tissue or of the secretion will help out, and also the fact that the ulcer is less likely to bleed, the odor not so foul, and little or no pain localized near the cervix. The patient may come to you because of sterility, scanty menstruation, frigidity with reference to the marriage relations, for some discharge, a vague uneasiness in and around the ovarian region, a tenderness on the right side making her think of appendicitis, or for ascites. Most all of these are symptoms of any form of inflammation. If the patient is unmarried and a virgin the chances are 90% in favor of a tubal enlargement being tubercular, provided that gonorrhoeal infection can be excluded especially if the pain is not markedly severe; and under the same conditions, the chances are nearly the same for an endometritis being tubercular.

In the married women we will have to depend more upon (1) a family history of tuberculosis; (2) consort with a tubercular husband; (3) tuberculosis in some other part of the body; (4) the use of the microscope to examine secretions and scrapings from the uterus to help out in the diagnosis; and these are available mostly only in the more advanced diseases. One or two of the more recent authors on general tuberculosis mention the use of the tuberculin test as a confirmatory diagnostic agent. This agent may therefore be of value to us in determining an early invasion where we have only a suspicion that trouble of that nature is developing. There are several preparations on the market supplied by the drug houses for this purpose, sealed in tubes in the proper dosage ready to use and with full directions—one made after the formula of Morro to be rubbed into the clean sound skin, covering with a gauze and oil silk dressing. Another which is

probably more practical and easy of application is made after the formula of Von Pirquet (old tuberculin 1 part, a 5% solution of carbolic acid 1 part, and normal salt solution 2 parts), two or three drops are placed on a scarified surface such as is usually made for an ordinary vaccination, let stand for a minute or two and then wiped off and a protective covering placed over it. The preparation for the eye test may be more reliable in its accuracy but is more severe in its reaction and would arouse opposition to its general use. While an occasional test may show in a patient having an especially irritable skin, a reactionary rash somewhat simulating the regulation one in which presence of the disease cannot ultimately be demonstrated, yet the absence of a reaction may be taken as a pretty sure evidence that no tuberculosis exists. An occasional failure should not cause us to throw aside so valuable an aid. Of course the tuberculin test only indicates the presence of a focus somewhere indefinitely located, but given a positive reaction in a case with some vague pelvic trouble, we are pretty sure to know what that trouble is.

Treatment.—Being assured that there is tubercular disease in the intrapelvic tissues or organs, or knowing there is some disease there and only strongly suspecting it to be tubercular, exploratory incision should be made to complete the diagnosis with the understanding that removal of the diseased organs shall be done if warranted. If the trouble is in the endometrium only, and so determined, abdominal section need not be done but merely give the uterus a thorough curettage, swab with iodine or an iodoform emulsion and establish free drainage; often this is sufficient to bring about a cure and does not

mitigate against a subsequent hysterectomy in case the disease is not conquered. The mere opening of the abdomen, airing the cavity and instituting drainage is often sufficient to bring about a cure of miliary tuberculosis of the peritoneum.

In salpingitis both tubes are as a rule affected and both should be removed; often only one ovary is diseased and should be removed, the other one may be left, if apparently healthy, unless the patient is at or near the menopause when in my judgment both should be removed together with the tubes. Some think a panhysterectomy should always be done if both tubes are affected, but if the uterus is only slightly infected or apparently normal it may be safely left and curetted and swabbed as before described. These are matters for individual judgment.

The presence of an advanced focus elsewhere is usually contra-indicative to operative procedures, and only palliative and general tubercular treatment can be used together with the usual hygienic, climatic and nutritive measures which should be employed in all cases whether operative or not. However, in these advanced cases, if the local process is causing more irritation and weakening the patient more than would be caused by removal, such removal might be considered as a part of palliative treatment—as curettage or amputation of the cervix, etc.

Medicinally, Ferrier claims to be getting excellent results by limiting the ingestion of acids with the foods and using a powder three times a day composed of calcium carbonate gr. viii, tribasic calcium phosphate gr. iii, and magnesium calcined gr. i, to promote calcification.

Prognosis.—The prognosis of intrapelvic tuberculosis is bad especially in ad-

vanced cases. If, however, we could see our cases in the early stages, whether primary or secondary, provided the original focus in the secondary cases is under control or not far advanced, removal of the offending organs gives us our best percentage of cures. At present the rate of mortality is as high or higher than that of cancer.

230 St. James Place.

SUCCESS IN THE TREATMENT OF CHRONIC DISEASE.

BY

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The average general practitioner is not, as a rule, especially overjoyed when an individual suffering from some disease of long standing comes his way seeking treatment. Most persons suffering from the class of diseases grouped under the broad term "chronic," have gone the rounds of the physicians in the neighborhood, and perhaps elsewhere, and have received little or no lasting benefit whatever. If the physician expects to make a success in the treatment of these difficult conditions, a number of important maxims must be learned and learned well. It will be my endeavor here to impress a few of these ideas upon the mind of the reader and in this way enable him to carry out with much greater success the treatment of chronic disease.

Since a correct diagnosis is usually more than half the battle, it stands to reason that the time and trouble given to the investigation of a given case are time and trouble well spent. If a physician fails in the treatment of any chronic affection, as-

suming that that particular case is not absolutely "incurable" (and, fortunately, there are very few conditions met by the progressive medical man that are entirely beyond his skill), the fault is to be found either in his investigation or his therapeutic acumen. Most frequently errors or shortcomings are in the diagnosis rather than the treatment, for the great and ever-increasing progress in medical science, especially along lines of treatment, is all duly chronicled in the various medical journals, and in this way is just as available for the physician at the remote country cross-roads as for the city physician with his medical society meetings and clinics—if they both read. On the other hand, while it is granted that there are many books and articles of special informative value to the man who is anxious to increase his diagnostic skill, there is, of course, no book or article that will tell just what is the matter with Mr. Brown or Mrs. Jones.

Successful work naturally entails close personal investigation, and unless more than the ordinary attention is given to this most important part of medical practice the results, or lack of results, must necessarily be unpleasant and unsatisfactory, both from the standpoint of the patient and of his physician. I might cite dozens of cases which have come to my notice in which failure was due solely to what might properly be called "scamped," superficial, or snap-shot diagnoses.

A diagnosis cannot be too thorough. Frequently the investigative procedures which the physician carries out may have led him to make an absolutely correct diagnosis so far as it goes, but it may not be as complete as it might have been, and as a result, unnoticed conditions are allowed to flourish whose existence curtails very

markedly the benefits which his well-directed therapeutic procedures might have otherwise accomplished.

A prominent physician recently said, and rightly: "Shortcomings in diagnosis frequently allow human beings to suffer for years who might, were diagnosis made clear, be healthy useful citizens all that time." He spoke of a habit to which some of the profession are unfortunately addicted, "of skipping over the real diagnosis altogether, and rushing pell-mell into the treatment, so-called."

The diagnosis of chronic disease is not reached as rapidly as that of typical smallpox or diphtheria; nor does the patient expect it at once. I well remember a difficult case in which my diagnosis was not arrived at for three months—but it was finally right, and a condition of many years' standing was first modified and then cured.

In the majority of cases we must treat not merely a disease alone. It must be evident, for example, that a patient suffering from tuberculosis should not merely receive treatment with reference to the particular infection with the tubercle bacilli alone. The inevitably lowered vital resistance, and the associated infection with germs other than the tubercle bacillus, should be looked after just as thoroughly and systematically as the Tuberculin-hygienic treatment is carried out. The digestive apparatus should be watched as closely as the temperature, and very great attention paid to the elimination of waste from the body, as evidenced in the urinary findings. Right here, it might be well to mention the fact that the old fad of "stuffing" a patient is hardly rational in the light of present-day knowledge, and if the physician takes the trouble to properly

look after the elimination of his patient and see just what the "dozen eggs a day" are doing to his patient's metabolism, he would easily recognize that this matter is worthy of closer consideration, because it is based on good common sense.

The estimation of the urinary acidity, the estimation of urea and ammonia, as well as the examination for indican and other abnormal substances in the urine, will all surprise the physician treating cases of the character under discussion, for by these means he will soon discover that the kidneys are being unduly overburdened, that the intestines are filled with a reeking mass of putrefying albumin, and that the patient is suffering from a toxemia probably equally bad, if not worse, than the toxemia due to the activities of the tubercle bacillus itself.

It will be plain that to accomplish these ends the usual abbreviated methods of physical investigation will not suffice. Recourse should invariably be had to certain laboratory procedures varying to some extent with the history, physical findings, etc. *In every case a complete urine examination should be made.* If there is reason to suspect gastro-intestinal disturbance, do not be satisfied with answers to a few questions, or even with the most thorough physical examination. Procure and examine the stomach contents after a test-meal given in the proper way. Frequently a fecal examination (chemical and bacteriological) will throw so much light on a case, that the unpleasantness of the procedure will be altogether over-shadowed by the definite knowledge obtained, and the results that this may make possible. The microscopic examination of pus, sputum or other secretions, and not uncommonly a blood examination or a few

simple tests of the saliva will be of much valuable assistance in the work. In this connection it will not be out of place to remind the reader of the help that a Tuberculin reaction (either that of von Pirquet or Moro) may be. This comparatively new procedure is used altogether too little, and has not yet received nearly the attention it deserves.

The blood-pressure instrument or sphygmometer is not used as frequently as it might be. It is comparatively rare to see an instrument outside of the physician's office in the larger cities or in up-to-date institutions. The blood-pressure is a point of tremendous value and I am not overstating the truth when I say that it should be estimated as a routine in the investigation of *every* chronic case. The new Faught instrument is as simple and compact as one could wish, an ornament and an essential to every progressive physician's office.

Another factor which plays a very important part in the successful outcome of the treatment of chronic disease is the cooperation of the patient. It must surely be evident that if the physician is attempting to correct certain disturbances and at the same time certain pernicious habits or customs of the patient are adhered to in spite of advice to the contrary, the physician is very much handicapped in his treatment, and should not be held responsible for any failure that may possibly result. It might be well here also to refer to the need for regularity in the treatment. This is a very important point. For example: For the relief of any given condition, office treatment may only be required every ten days or so; again treatment may be necessary two or three times a week, and at times daily attention may be ad-

visable in order to obtain the desired results. It must be plain that if one particular treatment brings a patient to a certain stage and in a sense prepares him for the next, the omission of a treatment, if a matter of common occurrence, will materially decrease the value of the whole series. It is because of this that the opinion is quite prevalent that chronic disease, to be successfully handled, requires the hospital or sanitarium regimen since the patient is under full control and can receive such treatment as may be deemed advisable without any break or inconvenience. This is true, but I believe, nevertheless, that any thinking individual by dint of a few gentle reminders would have sense enough to see to it that the treatment is as regular as possible and at the same time that the advice of the physician is explicitly carried out.

A point might well be made here regarding the instructions given to patients. Many times dietetic and hygienic suggestions are made in the office, and because of these the patient starts out very well. He eschews certain articles of diet as suggested and regulates his living very carefully—for a time. In a few days he forgets one item, then another, until finally he is back to the same old slough in which he was wading before he came to the office for attention. To obviate this, I believe it to be by far the best plan to give definite written instructions to the patient as to what he should eat and what he should not eat; to give him in black and white the most important general instructions regarding his method of living and make your ideas so clear that there may be no mistake regarding them. Of course, a copy of these instructions will be kept on file with the case history, prescription

copies, and other records. The instruction slip may well be shown to some member of the patient's family in order that their co-operation may also be obtained in helping the individual under treatment to faithfully "toe the mark."

The original initial examination of the patient is not enough. Careful watch must be kept of the changes which may be due to the treatment or to other circumstances. Personally I consider it of prime advantage to be able to make frequent uranalyses, for in this way the variations in the metabolism are shown up and the changes resulting from the treatment are made clear. It is often an excellent plan to administer certain remedies *using the urinary findings as the guide to dosage*. The results obtained are sometimes phenomenal, and no physician once accustomed to these methods will revert to the older (but admittedly less arduous) way. As far as repeated examinations are concerned, the same holds true of the gastric contents, feces, etc. Oftentimes the treatment is having a decidedly beneficial effect, although for a time no great modification of the patient's subjective symptoms is apparent. The progressive favorable change in the laboratory reports, however, is always a source of encouragement not only to the physician but also, when properly explained, to the patient.

There is another matter which seems quite difficult to instil into the minds of individuals suffering from chronic disease. I refer to the need for a more extended and systematic oversight of themselves after they may have passed from the close attention or immediate care of their medical adviser. The human body is very like a machine, and if an engineer should mend some broken part, see that it worked prop-

erly and then leave the whole machine to the tender mercies of chance without any regular supervision, he would very soon be in serious trouble. Instead, he feels the bearings, oils them carefully, tightens a loose nut here and there, and generally scrutinizes the machine with a special care and watchfulness, in this way anticipating trouble before it comes, and preventing what might frequently cause a serious accident. This same thing is just as true of the human machine and it becomes the duty of the physician to exercise just as much care and intelligent oversight as does the engineer. I firmly believe that a periodical and regular investigation of any individual who can be interested in this idea will lead to much more satisfactory work in the practice of medicine, and, at the same time, prevent, in their onset, a host of entirely needless chronic diseases. Such systematic care of an individual may often prove a means to very valuable ends, and if this article does nothing more than to impress upon the reader the great necessity for periodic, clinical as well as physical examinations, it will be well worth the time and trouble taken to write it.

In conclusion I might summarize the following essential points: 1. Obtain a thorough diagnosis, no matter how much it costs or how long it may take. 2. Find out *all* that is the matter with the patient. Do not be satisfied with simply finding some evidence of disease and overlook the rest of the body and other associated difficulties. 3. Be sure you are right, *then* go ahead, making use of the most rational methods that you know of, and pushing all your treatment to effect. 4. Always couple whatever therapeutic method you may be using with the most thorough elimination possible under the circumstances. 5. Ob-

tain the confidence and complete co-operation of the family. 6. Make frequent repeated examinations of the urine and, if needs be, of other specimens. This favors thorough work, and gives confidence to the patient. 7. Teach your patient something at each office visit, send him away from your office with an increased knowledge of some matter he was not previously aware of, and thus educate him in the prevention of disease. 8. Make the patient realize that he is liable to get into trouble again, to consult you regularly, and thus prevent the recurrence of disease in its incipency.

72 Madison Street.

ACTION OF GLANDULAR EXTRACTS UPON THE SECRETION OF URINE.

BY

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AND

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Schäfer and Herring¹ have shown that the infundibular part of the pituitary body yields a substance soluble in water and not destroyed by boiling, which has a specific action on the kidney, dilating the renal vessels and increasing the secretion from the tubules. If the urinary flow is suppressed from operative procedures or the anesthetic, it causes a flow. They think it is as actively diuretic as caffeine citrate. They found when there was a general fall of blood pressure with no increase, but even a shrinkage of the volume of the kidney, a diuretic action indicating a stimulation of the renal epithelium. This shrinkage of the

kidney precedes the dilatation in some cases. Pituitary was found to diminish the flow of pancreatic juice.

Hypodermically, the pituitary also slightly raises blood pressure, dilates the kidney vessels and increases the rate of flow of urine. They also point out that the adrenals and pituitary each consist of two parts, one epithelium, the other part of neuroectoderm origin. The epithelial parts of these two glands do not yield any physiological effect, whilst those of the neuroectodermic origin furnish substance affecting the heart and arteries. Here the similarity ends, for adrenalin excites the sympathetic terminals in general, whilst the pituitary does not.

Houghton and Merril, (*Journal Am. Medical Association*, 1908, p. 1849), have studied the action of adrenalin and the active principle of the pituitary gland upon the urinary secretion. Pituitary slowed the pulse rate after the use of atropin and after section of vagi. Aldrich obtained a crystalline picrate and a sulphate from the infundibular part of the pituitary. They found adrenalin to increase the blood pressure and the flow of urine. They experimented on normal man for several days where the food, drink, habits, exercise and work were the same. Then pituitary extract was given internally. They found only a slight increase of urine in man.

Then they made experiments upon dogs anesthetized by morphine and chloretone with cannulae in the ureters. The drops of urine were recorded with the blood pressure and the respiratory movements. Adrenalin increased the blood pressure from 56 to 88 mm. of mercury which within six minutes had returned to normal. The urine increased from 8 minims per minute to 30 per minute, the maximum following

¹ Philosophical Transaction of the Royal Society of London, pages 1-29.

closely the maximum blood pressure. The increase of urinary flow continued after the fall of blood pressure to normal, and at the end of fifteen minutes it was the same as at the beginning of the experiment. They also perfused kidneys excised, noting the flow from the renal vein and ureter, and found that pituitary extract added to saline solution made the venous flow and ureteral flow less than when saline alone was used. They do not believe in a specific action on the kidney cell, and if so it is less marked than in the case of a 1 per cent. saline solution. It is due to rise in blood pressure.

Pal noted in cats that the diuretic effect of pituitary extract was marked, when given intravenously. He emptied the bladder of a cat to which morphia and curare had been given, and found that the intravenous injection of two cubic centimeters of pituitary extract filled the bladder in a very short time. As is well known, the bladder is generally empty after curare narcosis. Pal's experiments as to the size of the kidney after the use of pituitary were not uniform like those of Schafer. Pal found that pituitary dilated the renal artery and contracted the coronary arteries.

Pal³ like Langendorff, found adrenalin dilated the coronary artery, whilst contracting the renal and other arteries. He found pituitary extract to dilate the renal arteries, but to contract the coronary and other arteries.

We made 70 experiments. The volume of the kidney was registered by means of an air oncometer and Albrecht's piston recorder.

Our experiments were mainly made upon cats; a few were made with rabbits. The

animal was bound down, given 5 cc. of paraldehyde by the mouth. Then chloroform was given. The abdomen was opened in the median line over the bladder, the bladder drawn out and an incision made into it. A funnel-shaped glass tube with a flange was inserted into the bladder and the bladder tied tightly about the flange. Then the bladder was filled with the urine previously obtained from the bladder. If this was not sufficient to fill the bladder, Ringer's solution was added. By means of a piece of rubber tubing attached to the funnel-shaped glass tube the urine was allowed to drop into the capsule. This was permitted for about fifteen or twenty minutes when each drop was noted on the smoked drum with an electric marker. Then the extract of the gland, rubbed up with distilled water and filtered, was injected into the jugular and the drops of urine again noted on the drum. The bladder was kept moist with absorbent cotton wet with Ringer's solution. The blood pressure was frequently noted at the time the drops of urine were registered.

Spinal cord ($\frac{1}{8}$ grain) had no effect on flow of urine; did not alter rate of pulse; increased blood pressure.

Prostate had no effect on flow; did not alter pulse rate; increased blood pressure.

Ovary reduced flow; did not alter pulse rate, but reduced arterial tension.

Spleen ($\frac{1}{2}$ grain) reduced flow; did not alter pulse rate; lowered arterial tension.

Testicular extract ($\frac{1}{8}$ grain) did not affect flow of urine or pulse; increased arterial tension.

Iodothyryn (1 grain) increased the flow of urine to a small extent. It also increased the volume of the kidney, although at the time the general blood pressure was decreasing and the heart beat remained the

³ Wiener, *Medizinische Wochenschrift*, 1909, P. 138.

same. The first injection of iodothylin in the cat elevated for the moment arterial tension, but it soon fell. The heart beat was increased.

Mammary gland (1-50 grain) produces a slight increase of diuresis. The volume of the kidney increased at the time the blood pressure was falling, whilst the heart beat was somewhat increased. In the cat the mammary gland extract increases the heart beat and temporarily increases the general arterial tension, after which it falls considerably.

The parathyroid (powdered extract 1-10 to 1-5 of grain) at first decreases the volume of the kidney and then greatly increases it. The increase of kidney volume is often so great that the registering pen cannot record it. The primary decrease of kidney volume is due to a temporary slowing of the heart. The subsequent increase of volume in the kidney is not due to any change in the rate of heart beat, and the general blood pressure at the time fell slightly. As a diuretic, the parathyroids were the most powerful of all the gland extracts. With the nucleoproteid prepared according to Beebe's method by Dr. W. N. Berkely the increase in the amount of urine was ten times that of normal (Exp. 21.) We found the parathyroids in a case of interstitial nephritis increased the quantity a half a pint a day. After the injection of the parathyroid powder glucose appeared in the urine to the extent of 3 per cent. The tests for glucose were by Fehling's solution, fermentation and the phenylhydrazin test.

Thymus slightly increased the flow of urine. It also augmented the volume of the kidney, although the pulse rate re-

mained unaltered and the arterial tension was falling.

The pancreas increased the flow of urine. The volume of the kidney was slightly increased, whilst the general blood pressure was decreasing, and the rate of heart beat considerably increased.

After injection by jugular of pancreas the urine contained $\frac{1}{4}$ of 1 per cent. of sugar, as shown by the fermentation and Fehling's test.

Schaefer, Houghton and Merrill have shown that the pituitary extract (infundibular part) increased the flow of urine. The volume of the kidney was greatly augmented, so much so that the lever could not register at times.

The renal cortex increased the flow of urine. The volume of the kidney in doses of 1-50 to 1-25 of a grain did not change.

Adrenalin decreased momentarily the volume of the kidney, whilst the blood pressure rose and the heart was slowed. Afterwards the kidney volume was greatly increased.

All these agents, the renal cortex, pituitary extract, pancreas, parathyroid, mammary gland, thymus, iodothylin and adrenalin, are diuretics. The above agents, except adrenalin, do not markedly increase general tension except for a moment, and then lower it. It is inferable that the very short rise of blood pressure does not produce the diuresis, which continues for a considerable time afterwards.

The increase in volume of the kidney shows a lessening of pressure in the blood vessels of the kidney. As neither general nor local increase of arterial tension plays any part in the diuresis, it must be referred to an action on the renal epithelium itself.

Appended are some of the experiments:

Experiment—Cat. 5 cc. Paraldehyde and Chloroform.

Time	Drops of urine in 5 minutes	Pulse every 15 minutes	Pressure
P. M.			
3.27	3	54	144
3.32	2	57	142
3.46 1/32 gr. thymus	4	62	104 to 116
3.51	1	56	116
4.00	3	60	112
4.05	4	58	114
4.13 1/16 gr. Thymus.	4	57	113
4.18	6	57	110
4.23	6	57	114
4.33	3	57	115

Experiment 33—Thymus on urine. Cat. 4 cc. Paraldehyde and Chloroform.

Time.	Flow
P. M.	
3.10.5	0
3.15.10	1
3.20.5	3
3.25.30	4
3.30.5	4
3.35.40 (1/32 grain in 2 doses)	3
3.40.5	3
3.45.50	3
3.50.5	3
3.55.00	1
4.00.05	1
4.05.10	1
4.10.15	4
4.15.20	2
4.20.5	4
4.25.30	3
4.30.5 (1/32 grain in 1 dose)	6
4.35.40	8
4.40.5	10
4.45.50	3
4.50.5	5
4.55.00	5
4.55.00	6
5.00.5	4
5.05.10	4
5.10.5	1

Experiment—Cat. Pancreas. Chloroform and Paraldehyde.

Time	Drops of urine 5 minutes	Pulse	Pressure
P. M.			
3.15	10	46	150
3.26	7	55	134
3.44	22	55	130
3.53 pancreas 1-32 gr.	31	61	108
3.58	37	57	110
4.08	50	57	108
4.13	44	58	98
4.22 pancreas 1-16 gr.	24	59	90
4.27	32	56	92
4.39	44	54	100
4.49	38	56	98

Experiment—Cat. Iodothylin, Chloroform and Paraldehyde.

Time	Drops of urine every 5 minutes	Pulse	Pressure
P. M.			
3.30	7	48	106
3.35 iodothylin			
1/2 gr. per jugular	10	49	108
3.40	9	49	112
3.45	10	50	112
3.50 iodothylin			
1 gr. per jugular	7	50	102
3.55	9	52	102

Experiment 1. Pituitrin on urine. Cat. Paraldehyde and Ether.

Time	Drops every 5 minutes
P. M.	
3.00.5	5
3.05.10	5
3.10.15	5
3.15.20 (5 gtt.)	8
3.20.25	5
3.25.30	5
3.30.35 (10 gtt.)	9
3.35.40	6
3.40.45	5
3.45.50	10
3.50.55	8

Experiment 28—Boiled kidney cortex on urine. 5 cc. Paraldehyde and Chloroform.

Time	Drops of urine every 5 minutes
P. M.	
3.04.9	11
3.09.14	11
3.14.9 (1-16 gr.)	12
3.19.24	15
3.24.9	15
3.29.34	17
3.34.9	16
3.39.44	19
3.44.9	18
3.49.54	18
3.54.9	16
3.59.04 (1-8 gr.)	16
4.04.9	14
4.09.14	14
4.14.9	14
4.19.24	15
4.24.9	15
4.29.34	15
4.34.9 (1-4 gr.)	11
4.39.44	10
4.44.9	14
4.49.54	10

Experiment 16—Parathyroid on urine. Cat. 5 cc. Paraldehyde.

Time	Flow	Heart rate 15 sec.	Blood Pressure
P. M.			
3.29.34	2	66	140
3.34.09	3	55	136
3.39.44 (1-4 gr.)	5	55 (120)	130
3.44.09	5	55	130
3.49.54	6	52	130

4.00.05 (1-2 gr.)	6	56 (120)	112
4.05.10	7	57	110
4.10.05	8	51	110
4.15.20	6	51	100
4.33.08 (1 gr.)	5	50 (62)	82
4.38.43	6	50	72
4.43.08	5	50	72
4.48.53	6	50	70
4.55.08	4	50	78

Experiment 21—Parathyroid nucleoproteid on urine. Cat. 5 c.c. Paraldehyde.

Time			
P. M.	Drops of urine every 5 minutes		
10.57	5		
11.02	8		
11.07	1		
11.12	1		
11.17	4		
11.22 (1 gtt.)	4		
11.27	8		
11.32	10		
11.37	13		
11.42	19	Glycosuria 1	
11.47	26	per cent. by	
11.52	37	fermentation.	
11.57	41		
12.02	28		
12.07	21		
12.12 (1 gtt.)	22		
12.17	22		
12.22	24		
12.27	28		
12.32	26		
12.37 (2 gtt.)	21		
12.42	14		
12.47	12		
12.52	11		
12.57	8		

Experiment 22—Parathyroid nucleoproteid on urine and circulation. Cat. 5 cc. Paraldehyde and inhalations of Chloroform.

Time			
A. M.	Drops every 5 minutes	Rate	Blood pressure
11.00.05	5	57	124
11.05.10	7	54	112
11.10.05 (2 gtt.)	9	56	112
11.17.22	13	53 (112)	106
11.22.07	14	55	100
11.27.32	12	55	94
11.32.07	11	53	84
11.41.06 (2 gt.)	9	51 (74,82)	80
11.46.51	7	53	76
11.51.06	8	53	72
11.56-12.01	6	52	70
12.10.05 (2 gtt.)	8	50 (68,74)	72
12.15.20	11	49	70
12.20.25	11	51	70
12.25.30	11	51	70
12.30.05	10	51	70
12.38.43 (3 gtt.)	10	49	70
12.43.08	7	50	70
12.48.53	11	50	68
12.53.08	7	50	66

Glycosuria, fermentation test $1\frac{1}{2}$ per cent. after parathyroid.

Experiment 2—Mammary gland on urine. Cat. Paraldehyde 5 cc.

Time.	Flow	Rate	Blood pressure
P. M.			
3.45.50	18	39	156
3.50.05	18	39	156
4.00.05 ($\frac{1}{2}$ gr. mammary)	25	72 (80)	120
4.05.10	20	59	136
4.15.20 ($\frac{1}{2}$ gr. mammary)	22	59 (66)	99
4.20.25	29	66	130
4.30.00	Died.		

THE THERAPEUTIC VALUE OF DIAPHORESIS IN THE TREATMENT OF OCULAR DISEASES.

BY

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Artificially induced sweating, as a therapeutic measure in the treatment of various diseases of the eye, must be considered of great importance. Though often neglected it constitutes an efficient agent in the domain of ophthalmic therapy. It is a valuable adjunct to the medicinal agents employed both by local application and internal administration. In fact it often enhances the efficacy of the various medical agents used in the treatment of diseases of the eye.

Active diaphoresis may be induced either for its direct curative effect acting favorably upon the inflammatory process, or with the intention of impressing the general system and through it influence favorably the ocular condition.

Diaphoresis may be induced (a) by thermic influences (b) hydriatic measures, (c) by means of medicinal agents (d) and by all these agents combined. The thermic and hydriatic measures wherever possible should be employed with preference.

The Russian vapor baths and the Turkish hot air baths are the most convenient

and the most effective means to produce active diaphoresis. They are to be found in nearly every town of any size, are obtainable for a small recompense and therefore accessible to all classes of patients. When we take into consideration that most patients in whom the diaphoretic treatment is indicated are of the ambulatory type and are not necessarily confined to bed the utility and value of these public sweating places become obvious. In places where these baths are not accessible or where the patient is bedridden and cannot avail himself of them, some substitute bath based on the same principle can be devised at home, this is especially probable with the Turkish hot air bath. Hot air can be generated by a self-devised inexpensive apparatus at home by means of an alcohol lamp over which is placed a curved chimney pipe leading to the bed the covers of which have been elevated and held in a semicircle form by some heavy wires. The wet pack may be employed when the above self-devised apparatus is not on hand. In all these selfmade sweating processes in order to enhance diaphoresis it is well to administer large amounts of water. This promotes a more rapid and a more effective stimulation of the sudorific glands. Medicinal diaphoretics should be avoided as far as possible and should be employed only when no other means is on hand to produce an active diaphoresis. Several varieties of diaphoretic baths have been devised by the Germans but the above mentioned is the most easily prepared and can be used even in the poorest of homes with convenience. For the ambulatory cases however the most reliable and most practical is the Russian and Turkish bath. To the Russian bath the objection is often raised that the patient is exposed to catching

cold. This however can be avoided by a stay in the anteroom during the cooling process. Every modern bath house is provided with such rooms where the patient can rest comfortably. Of course the atmosphere in these places is not an ideal one and may in some cases have an ill effect upon the various organs, even give rise to congestion in the brain, a thing that would destroy the very object for which the bath has been prescribed. Yet in carefully selected cases it is, after all, the best means of inducing diaphoresis when pains are taken not to employ it where any fear of congestion exists. At any rate the benefit derived from the bath often far exceeds the harm it may produce. The effect of diaphoresis can be stated briefly to consist of (a) its action as an evacuant, (b) its action as revulsive, (c) its alterative effect, (d) its action as an absorbent, (e) its action upon the circulatory system, (f) its action upon the nervous system, (g) and its effect in enhancing the efficacy of the various medications employed in combating the inflammatory condition.

In diaphoresis we find a very valuable though much neglected agent in the treatment of various ocular diseases. Too little importance has been attached by the American text book writers to this therapeutic agent yet if my observations may be trusted it is one of the most effective means in combating some inflammatory diseases of the eye.

Its action as an evacuant results from the stimulation of the sudoriferous glands which increase their activity abstracting large amounts of fluids, volatile substances, organic and inorganic salts, carbon dioxide, uric acid and urea as can be gathered from an analysis of the constituents of the perspired fluid. The sudoriferous glands are

stimulated to increased secretion by thermic influences. These stimulations of the excretory elements of the integument increases the excretory products purifying the blood and rids the system of its obnoxious elements. Ingestion of cold water will enhance the thermic influence of the sweat glands. The removal of a considerable quantity of fluid and the dilatation of the peripheral blood capillaries draws the blood away from the central to the peripheral vessels depleting the deeply seated vessels and produces the revulsive effect removing the congestion from the affected area which influences favorably the inflammatory process.

Diaphoresis arouses the dormant nutritive changes, improves tissue metabolism by enhancing oxidation. The consumption of nitrogenous material is more pronounced as a result of the thermic influence which eliminates albuminous matter through the pores of the skin. As a result of its stimulating effect upon tissue changes enhancing metabolism we find in this agent an important alterative which can be of value in the treatment of ocular diseases. As a result of its eliminative powers it eliminates the various toxins of the body and in consequence of its action upon the vascular system it hastens the absorption of inflammatory products, it thus acts as an absorbent and is indicated wherever absorption is essential to bring about a cure. Not only does diaphoresis act upon the vascular system but it also stimulates the nervous system central and peripheral and it therefore has a favorable effect upon the local inflammatory process.

Indications for the use of diaphoresis.

From our analytical study of the effect of diaphoresis upon the organism and indirectly upon the ocular tissues we may

well conclude that some ocular conditions of an inflammatory nature will be greatly benefited by this therapeutic measure. The ocular conditions are of course influenced through the effect upon the entire system. Those conditions of the eye that may be attributed to faulty metabolism or systemic disturbances will often yield wonderfully to this process when combined with the local and general internal medication. Scrofulous patients are greatly benefited by diaphoretic measures. Diseases of the eye attributable to scrofulous conditions such as eczema of the lids, phlyctenular conjunctivitis and the recurrent types of keratitis will often yield to a systematic course of sweating. In turpid conditions of the cornea in the so-called serpiginous form of keratitis where the cornea is ill nourished because of a general debility, steam baths will very often aid the ophthalmologist to combat the disease. In scrofulous conditions where the face shows signs of ulcerations the steam bath will often clear the face as well as the ocular condition. Diseases of the eye attributable to rheumatic causes very often yield to the therapeutic effect of active diaphoresis, especially is this the case in inflammatory conditions of the iritis. In many cases the inflammatory process in iritis is much shortened by the combined treatment of local and internal measures and the sweat bath. It has undoubtedly an influence in preventing posterior synechia, by its stimulating effect to the parts, giving rise to a more vigorous activity in absorbing the inflammatory product. Notably is this method of treatment indicated when there is tendency for the inflammation to recur. The sweating treatment should, according to some clinicians, not be employed during the progressive period of the disease but rather

after the acme of the disease has been reached as well as during the period of decline and continued after the inflammatory process has subsided in which case the physiologic action and its therapeutic effect will prevent a recurrence of the disease. My experience teaches me however and it is my practice whenever there is no contraindication to its use to begin active diaphoresis by means of a Turkish bath in the very early stage of the disease and continue it during the entire course of the disease at intervals of from three to six days. This practice while it rarely aborts the iritic inflammation always tends to shorten its course and prevent complications. I always advise two Turkish baths weekly at intervals of three days in the early stages of iritis. Not only is the bath indicated in acute stage of the inflammation but also in chronic iritis and I fully believe that every ophthalmic hospital should have facilities for sweating baths which must be preferred for inducing diaphoresis to such cardiac depressants as pilocarpine.

The toxic amblyopias constitute a vast field for the employment of this method of treatment. It certainly hastens recovery by aiding in the elimination of the toxic material, especially is this true of tobacco amblyopia. Removal of the offending substance and a systematic course of sweating baths is really all that is essential from a rational point of view. In various affections of the eyes caused by the so-called uric acid diathesis sweating becomes an important adjunct in the treatment; to this class of cases belongs scleritis and episcleritis. I recall well one case of episcleritis that resisted treatment and which promptly yields to a steam bath. I order every patient with scleritis and episcleritis a Russian

bath and invariably I am thanked for it. Luetic ocular conditions are much benefited by the sweating treatment. Of course mercury is the drug *par excellence* but induced diaphoresis by the Turkish bath is an indispensable adjunct. The effect of the bath is manifold. The integument becomes more pliable, the skin becomes more porous, the glands, being stimulated by the sweat bath, more readily absorb the drug. Mercury is more readily tolerated because of the alterative effect of the bath enhancing metabolic changes so that a larger amount of mercury can be administered with less ill effect upon the system. Moreover the eliminative processes having been stimulated by the baths the possible ill effects of the drug, such as stomatitis, ptialism, and gastro-intestinal disorders are greatly minimized. It is further well to remember that some skins are of a peculiar rough texture and very often under such circumstances the mercurial inunctions are not yielding the proper effect; sweat baths in such cases will often remedy the evil and should be tried in preference to the use of the drug by the hypodermic method. Luetic conditions giving rise to iritis irido-cyclitis paralysis of the external and internal muscles, choroiditis, optic neuritis and opacities of the vitreous are all indications for the diaphoretic treatment by means of the vapor bath. In cases of vitreous opacities the Turkish bath should always be employed as an important adjunct to the medical treatment. In interstitial keratitis the Russian steam bath is of great value in shortening the course of the disease and in preventing a recurrence. It should be employed with regularity once or twice weekly depending upon the age of the patient

and it may often, when only one eye is affected, prevent its appearance in the other eye.

In sympathetic inflammations of the eye I believe it should be tried. I have had no opportunity to employ it in sympathetic inflammations; the theory however upon which the value of this diaphoretic therapeutic agent rests indicates its use in these cases.

In cases of acute exudation into the choroid and retina, the sweat bath, either the moist Russian or the dry Turkish bath, is strongly indicated. It certainly hastens the absorption of the exudation by drawing fluids from the circulation and by stimulating the lymphatic glands; for the same reason it is also of benefit in hemorrhages into the retina or vitreous. I have employed the Russian bath in retinal hemorrhages with good results. In vitreous opacities and hemorrhages unless there is a contraindication because of some cardiovascular condition, the diaphoretic treatment should be employed. In diseases of the uveal tract where there exists some haziness of the media and where the absorption process is slow it should be accelerated by means of the sweat bath. The best result is obtained when the treatment is begun early, during the acute process. From the careful study of the subject we may reach the following conclusion: That sweating either in the moist form or in dry form is a very valuable therapeutic agent in the treatment of ocular diseases in both the acute and the chronic conditions.

That the beneficial influence upon the ocular processes is accomplished: (a) By enhancing and readjusting metabolic changes and its influence in removing metabolic end products and the elimination of deleterious toxic substances from the organism. (b) By the reestablishment of the

equilibrium in the general circulation, removing all possible venous stasis and the purification of the blood itself by the elimination of circulating toxins, following the stimulation of the sweat glands and the direct effect upon the vascular system. (c) By invigoration of the peripheral and central nervous system thus increasing the nutrition of the ocular tissues affected. (d) By its action upon the lymphatics, stimulating absorption and thus carrying off the inflammatory products of the diseased parts of the eye. (e) By the local stimulative effect of moist heat so important to the tissues and so essential in the various inflammatory processes of the eye.

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THE DERMATOLOGIST AS SEEN BY THE GENERAL PRACTITIONER.¹

BY

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Specialism in medicine goes back as far as the old Egyptian times, but only modern medicine has developed specialism as we find it now, until today we really live in an era of over-specialism. Not only do we have specialists for every branch of medicine, but we even have specialists in special branches. Thus in internal medicine we have heart, lung, stomach, metabolism, etc., specialists almost for every internal organ; in surgery we have brain, kidney, rectal, hernia, etc., surgeons. No doubt the highest technical skill is acquired by repeating the same kind of labor indefinitely, but does not this lead to onésidedness? Does not this make the physician forget that his patient has some other organs besides the one he is specially interested in? Now as to the dermatologist: His branch

¹ Read before the Med. Society of the Borough of the Bronx.

of medicine exists as a specialty, particularly since Hebra, if we disregard a few men before him, who reached prominence. He developed a classification of skin diseases, and practically originated its nomenclature. To my mind the dermatologist of today can be divided into three groups:

(1) The true dermatologist. A man who has successfully practised general medicine for a number of years, and thereby acquired an inclination toward dermatology; who has become associated with a good hospital or clinic, and who has studied a large amount of clinical material under a good and competent teacher; who has given up general practice entirely, and devotes his whole time and energy to dermatology.

(2) The half-baked or self-styled dermatologist: He is a man, who usually is not successful in general medicine, and thinks there is more money in a specialty. He takes a few post-graduate courses here, or goes abroad, if possible on his wedding trip, combining "*utile cum dulci*," studying from 3-6 months, and coming back as the great *I Am*, professing to strictly adhere to his specialty, but not hesitating to take a confinement, if it so happens, "of course only for his old families."

(3) The advertising dermatologist, or as he is generally known, the beauty doctor, who extends his specialty principally to cosmetic effects and enriches himself on his stupid clients, to whom he promises to correct any deformities while they wait, and to make them as beautiful as Apollo or Venus.

Now as to the true dermatologists as we general practitioners see them: What are their short-comings? Principally, in my opinion, the tendency to adhere too closely

in diagnosis and therapy to the skin lesion only, forgetting or purposely omitting its probable connection with the patient's alimentary or urinary system, or overlooking the fact that perhaps some blood changes may be the underlying cause of their skin trouble. A little occurrence which happened to me recently illustrates this: A lady brought to me her baby ten months old, which was covered with a generalized eczematous eruption. This child had been treated by a skin specialist, but as it did not seem to get any better, the mother brought it to me, and asked me if I could not recommend a better specialist. I asked her if the dermatologist had regulated the child's diet, and she answered "no." As I knew that the child ate almost anything on the table, I told the mother that she did not need another specialist if she was willing to do as I directed her, namely, to modify the child's diet and to correct its constipation. The mother consented to do so, and the child is now well. A common practice amongst dermatologists is to diagnose the case just from the appearance without asking any history. Should the history contravene the diagnosis, so much the "worse for the history," for I heard a prominent dermatologist say "Damn the history." If a lesion has some resemblance to syphilis, it will be diagnosed as such, even if the patient, who always observes himself closely and would readily confess an infection, emphatically denies it. Some of our dermatologists have developed what one might call a syphilomania. Everything which does not fit in the frame of an ordinary skin lesion is labelled syphilis. Cases are on record where the patient underwent a strict anti-syphilitic treatment for years, without ever having had syphilis, just because his physician was a

syphilomaniac. Another dermatological faddist is the X-ray man, who professes to cure almost every dermatological lesion with the ray, and if his colleagues do not get the wonderful results he is getting, he can only explain it on the supposition that they do not know the right technique. It is really amusing to witness a meeting of dermatologists as has been my privilege. A case is presented for diagnosis for instance.

Dr. A. is asked for his opinion first, he thinks the lesion is tubercular, Dr. B., who follows, is for syphilis, Dr. C. is for lupus erythematosus, Dr. F. is for eczema psoriaforme, and so on down the line; almost every one has a different diagnosis, and those who do not know, coincide with some of the previous speakers. And those are the cases we general practitioners send to the dermatologist, to get his wise opinion! A common controversy is the differential diagnosis between psoriasis and syphilis, or pityriasis rosea and syphilis. If they cannot come to an exact conclusion, they advise us to make our diagnosis "exjuvantibus," that is, give the patient a number of injections of mercury, so that he remembers you every time he sits down, and give him K. I. until he cannot see out of his eyes, and his nose does not stop running. If the lesions are just the same after this fair trial, then you can assure your patient that he has no syphilis. Is it not fortunate that, as a rule, our patients do not die from a skin disease, so that they can stand such vivisection without much harm? Another bone of contention are the leg-ulcers. Is the ulcer specific, or caused by an ordinary parenchymatous dermatitis? I have seen the same ulcer diagnosed one week as a specific, and the next week as a parenchymatous ulcer, and that by the same

dermatologist. And again at a subsequent visit the same learned doctor diagnosed this same ulcer as a mixed infection, which was the easiest way out of a quandary. The same controversy takes place when an ulcer on the genitals is presented. One calls it a hard, another a soft chancre, and the wise man calls it a chancre mixed and does not take any chances. Wait for the roseola before you start treatment, the dermatologist tells you, but supposing the patient insists upon a diagnosis immediately and is not intelligent enough to understand your explanation why he should wait, you can be sure he will go to a less scrupulous medicus who will make a positive diagnosis immediately even though he is not sure of being correct. It is not embarrassing when a prominent X-ray man, who is capable of curing almost every skin lesion with the mysterious ray—presents at a meeting a cured case of favus, and the other men jump on him, showing him some favus scutula, which apparently must have escaped the powerful rays. An ugly large swelling on the cheek was presented as a primary syphilitic lesion (not such a common occurrence,) but what an embarrassment for the demonstrator, when a somewhat curious colleague started to squeeze the chancre a little harder, and caused its rupture with an abundant discharge of pus, showing that the suspected chancre was only a simple every-day abscess. And so I could go on, quoting similar examples, where the dermatologist has made more or less grave mistakes, and where we general practitioners could have done equally as well, or perhaps better. But we and nobody else are to blame for this state of affairs; we have taught the public to run to the specialist for every ailment which is a little out of the ordinary

every-day routine. If this keeps on, I am afraid the time is not far distant when the existence of an all-around general practitioner will be a thing of the past, or only to be found in a small community. Is it not our all common experience that a new patient will ask us whether we make a specialty of something only to be favorably impressed if we say we do? They consider the general practitioner as a subordinate class and the specialist as a superior physician, using us often as an agent for the specialist, calling on us sometimes for the diagnosis, often not even for that, and then turning around and ask us the address of a specialist. Now what must we do in order to change, or to improve such a state of affairs? The answer is very simple: We must educate our patients by showing them that they do not need a specialist right away, that we can treat and usually *cure* them, if they would only give us their full confidence and be patient. Dr. A. Jacobi relates a little occurrence that happened to him which is rather apropos. A man called with his child to have it examined, and when this was done, he asked Dr. J. if he had not better go and see a specialist; Dr. J. answered "if he was not satisfied with the doctor he had better go somewhere else." That afternoon the man showed up in Dr. J.'s free clinic. When he saw Dr. Jacobi there he said "doctor you might know what is good for children but not what is good for yourself." And now how are we going to educate our patients and teach them to be treated first by us before going to the specialist? By studying our cases more closely, devoting more time and labor to examining our patients and trying to keep up with the modern advancement of medicine. We all should spend some of our time every day

in clinics doing practical work: we should go to medical meetings, and read medical literature. That some claim to be too busy to do this, is no excuse. If they would cut down their practice by dropping some of their undesirable element of their clientele, or charge bigger fees, they would have more spare time, and with more spare time, they will be able to do better work, and with better work, we can charge better fees, and not allow patients to begrudge the small remuneration we receive, whereas they do not hesitate to pay any fee to the specialist. If in spite of all our efforts we fail to cure our patient, then we should send him to the best obtainable specialist. Thus we will raise the standard of the specialists also, forcing out unworthy elements and leaving only the best men in the country to fill the highest ranks of medicine.

1872 Washington Ave.

TO STAMP OUT LEPROSY FROM HUMAN ILLS.

BY

ALBERT S. ASHMEAD, M. D.,
New York City.

Dr. J. Ashburton Thompson, the chief medical officer, Sydney, New South Wales, in a letter written to me October 13, 1908, says, (regarding the Nastin treatment of leprosy, which was introduced to the leprological world, with great flourish of trumpet, by Dr. Deycke Pasha of Constantinople, a treatment of inoculation with cultures of leper-bacilli, etc., and by which Dr. Mason of Wellington, New Zealand, has claimed to have effected cures): "I am much interested in your contributions, especially in that on yeast; in some such

direction (increasing the opsonic index of lepers) that is to say in the natural forces of the body trained by one means or other to exceed the normal, will the remedy be found. You know all about Deycke Pasha's Nastin, no doubt. I should much like to have your views on it. I have been using it—so far without any striking results." Dr. Thompson in his latest article on the trial of Prof. Deycke's Nastin treatment in three cases of tuberous leprosy and in one case of pure nerve leprosy (read at the Second International Conference on leprosy, Bergen, 1909,) shows that this treatment, so lauded by Deycke in his publications (*Internationaler Dermatologen Kongress*, Berlin, 1904; *Deutsch. Med. Woch.*, 1905; *Lepra*, 1907; and *British Medical Journal*, 1908) utterly failed in his hands, and was without any of the claimed reactions and that it was even *dangerous* to use.

In his article published in *Internationaler Dermatologen Kongress*, Berlin, 1904, Dr. Thompson deplored Hansen's law of segregation as being unworthy of the credit of being sufficient in itself of ridding any country of leprosy. He denied Hansen's claim for credit.

Besides this important question of possible opsonic cure of lepers I hope to bring to the attention of the Bergen Conference another matter equally scientifically sound.

Let me briefly suggest it here. Danger is imminent and no delay is pardonable. Organized and equipped investigation—effort is immediately necessary. An International Leper-Laboratory for organized and reliable scientific work is imperatively demanded to be instituted somewhere, to stamp out leprosy from human ills. Not enough satisfactory data exist yet, to induce international philanthropic aid, in its

behalf, in the sum necessary. But the medical departments of every government are able and in duty bound towards its own army and navy; and humanely towards mankind, to undertake the work.

Let the medical departments of every nation communicate with Dr. J. Ashburton Thompson, of Sydney, New South Wales, the half-way country between the Orient and Occident. Let the United States departments enter into communication with the medical departments of other countries upon this subject. Individual work will be too slow to conquer the disease internationally, and is apt to be hampered by personal disagreements. Harmonious co-operation is absolutely necessary for quickest and best results. Either this or Molokai, where an international laboratory station could be quickly established by our own government's offer of it, and where the hopeless are willing to submit to all treatment, and segregation without complaint.

It is as much to be commended on the part of the various governments as is their cooperation at the Hague.

No time is to be lost. Private medical work will be stimulated rather than hampered by it. The suggestion as to Molokai does not contain in my mind, the importation there of alien lepers. I have in mind a permanent station only, to be provided by this government, with residences for the internationally appointed scientific medical delegates, chosen each by his own government; these residences to be free of cost to them, their compensation to be arranged by each government for its own.

This government should provide all the buildings necessary—a very small expense comparatively.

The leprosy subjects are already there, ready for systematic, international investi-

gation-treatment, and will willingly remain there, being near home, or at home, with police regulation to insure segregation. (Other details to be worked out).

Nothing else will do. We have too much fake-treatment of leprosy, too many false remedies, in separated fields of our labor. Let us all follow this scientific work, by united system, and not for self-glorification.

Dr. J. Ashburton Thompson's case of legally cured leprosy, a British soldier of Ceylon, departed from the asylum, in New South Wales, at the very moment when his continued presence there was of the utmost importance to leprological science. Under the British Colonial law, he was of course, entitled to his liberty as all symptoms of his disease had disappeared. But Dr. J. Ashburton Thompson says: "As yet it cannot even be claimed that the disease has entered on a stage of assured quiescence." The *legal* cure of leprosy is by no means scientific cure of the disease, in spite of Louisiana's claim that it is such.

We all know how difficult it is to procure attendance without compulsion.

The matter I suggest here, that is international treatment of leprosy, will be, I think, a work of years. The people of this land are vitally interested now—did they but know. We are on the very soil of Asia, the home of leprosy, for the Philip-pines are ours.

The Norwegians have been a sea-going people for one thousand years. It may well be that these sea-farers have brought the Asian terror to the eastern world. The question is no longer a local question. The fifty communes of the United States will not unite and cooperate for the national welfare on this health matter. This government needs no special authorization.

It has a general and unenumerated police power as has every State government for the public weal, to prevent public woes.

This international action idea I hope to be able to present at the second leper conference, which will assemble next August at Bergen, Norway, and as I view it, just where organized international action against leprosy is sure to be most opposed. For Hansen has successfully conquered the plague in Norway, by unloading his burdensome problem on the United States; half his population came here. He stands proudly, therefore, for his "mixed-law," which has permitted so many of his lepers to emigrate, and the Bergen Congress will doubtless compliment him still further by declaring against any united international action, which could have interfered with Hansen's cleaning Norway of her leprosy, by allowing free emigration of lepers and leper families, to other countries. Hansen strongly opposed my ideas of international action against the disease at the Berlin Leper-Conference. It was he who killed my proposition for an international committee.

Our American leprologists, therefore, must have reliable aid, to protect us against the machinations of leper countries. A world wide question is this: Unsuspecting and unsuspected lepers are here from Norway and from Asia; the migratory points of danger to both our shores. Is it possible that a universal plague is setting in? The West and the East are now in close contact, and we lie wedged between. There is no peace! And wars spread leprosy.

50 W. 106th St.

Colon irrigation, after the method of gastric lavage is sometimes effectual when the most actively compounded enemata are not.

SOCIETY PROCEEDINGS.

EASTERN MEDICAL SOCIETY.

PRESIDENT'S ADDRESS.

A. J. RONGY, M. D.,
New York City.

Mr. Chairman and Members of the Eastern Medical Society.

In assuming the office of President, I beg leave to state that I am fully conscious of the honor bestowed upon me. I am cognizant of the responsibilities it entails. I am entirely aware of the difficulties I shall have to encounter. I therefore ask you to cooperate with me and give me your support in my endeavor to make this society the most progressive of our New York organizations.

Mr. President, to succeed you in office is quite sufficient to satisfy the ambition of any member of this society. I assure you that I shall spare no time or effort in maintaining the high ethical standards you have so firmly established. I shall try to continue to administer the office along the lines you have so ably outlined. I know of the problems you have had to solve; of the obstacles you have had to overcome. With all that I feel that a great deal is yet to be accomplished. I am sure it will be, if the executive officers receive the proper assistance from the individual members.

The executive committee, as now constituted is ready to accept suggestions from the members on any question that will tend to the betterment of the society.

The problems of the medical profession at large and particularly of medical men in this section of the city are too

numerous to be brought forth to-night, but I believe that we are now in a position by virtue of our numerical strength alone, to enter upon certain reforms which affect us most prominently. I particularly have in view the abuse of medical charity which is constantly robbing the physician of his legitimate income and pauperising the public at the same time. I especially refer to family contract practice which I understand is prevalent among our members in certain parts of the city, and has assumed such proportion that it is almost impossible for the physician to maintain his self respect and proper dignity in the community in which he is practicing.

Both of these evils can be overcome, and a heroic attempt in that direction must be made.

In order for a society to gain the moral prestige and respect of a community it must constantly strive to make itself more useful to that community. Heretofore this society has taken a passive interest in affairs affecting its immediate surroundings. I would suggest that our constitution be amended, so as to establish a Committee on Legislation and a Committee on Public Health, such committees I am sure will be of great benefit to the Society and also to the public. These committees may be newly created or if on due consideration it is deemed advisable, they may supersede the House and Library committees since we have neither a house nor a library.

In conclusion I wish to state that I shall concentrate my best efforts to the administration of the affairs of the society, laboring continually with one object in view, and that is to make this body of earnest men not only a power for good but of real service to its members.

EASTERN MEDICAL SOCIETY.

The regular monthly meeting of the Eastern Medical Society of the City of New York was held on the evening of February 11, 1910, at the Cafe Boulevard, Dr. A. J. Rongy, the President, in the chair. Immediately after the executive session the scientific program was taken up as follows:

1. PAPER,—

Meningitis complicating Pneumonia, with a report of several cases.

By A. HYMANSON, M. D.

2. SYMPOSIUM ON PNEUMONIA IN CHILDREN,—

(a) Etiology and morbid anatomy.

By ROWLAND G. FREEMAN, M. D.

(b) Symptomatology, Physical signs, Clinical Varieties, Sequelæ and Prognosis.

By HENRY HEIMAN, M. D.

(c) Discussion by

Dr. William P. Northrup, Dr. Joseph E. Winters, Dr. Henry Dwight Chapin, Dr. Louis Fischer, Dr. Walter Lester Carr, Dr. Thomas S. Southworth, Dr. Henry W. Berg.

These important papers with full discussions will appear in our April number which will be devoted exclusively to pneumonia and its complications.

ETIOLOGY AND DIAGNOSIS.

Tetanus, the Damoclean Sword of Surgery.¹—There is no complication occurring in the course of surgical treatment that strikes such terror to the heart of the zealous surgeon as tetanus. To use every aseptic precaution, to safeguard a patient by every means known to modern surgical technique, to have convalescence progressing splendidly—and then a few hours later to have that selfsame patient dying in the throes of tetanus, is an experience calculated to discourage even the most philosophical and well poised. It is, as a matter of fact, the ambush-like character of its attack that makes tetanus such a fearful

foe, and places it in such a sinister relation to every surgical operation. It delivers its blow when least expected and when the surgeon as a result of his care and technique would seem to have most right to feel confident of success.

But the blow falls and then straightway the whole ground must be searched and researched to ascertain the avenue of infection. Sometimes as a result of the precision possible without modern microscopic and bacteriological methods, the source and manner of ingress of the tetanus organism and its spores can be determined. In the majority of cases, however, the source of the disease remains an unknown quantity; it simply occurs eight to fifteen days after a surgical operation performed under the most rigid precautions. One case only out of several hundred may be stricken, and the technique and care employed with that one case may not have varied one iota from the technique and care employed with all the others. The definite cause may therefore be so obscure, that the sudden development of tetanus and the death of the patient may appear as nothing less than some trick of fate.

It is natural to blame something. The infection came from somewhere, and it gained its entrance and exerted its baneful influence somehow. In the past when the source of the infection was not immediately patent, the catgut was blamed. This was convenient, for the accusation could not be refuted. Tetanus organisms were occasionally found in catgut sutures and doubtless a few cases were actually thus produced. Even today indifferently selected or sterilized catgut may be a source of such danger. But with the possibility of securing and employing catgut prepared and sterilized under conditions that forever eliminate it as a carrier of tetanus, anthrax or any other organism, sutures of this character can no longer be made the scapegoat for the so-called idiopathic cases of tetanus.

In more ways than one, this should mean much to surgery. With the possibility of knowing beyond the peradventure of a doubt that the catgut is guiltless, more assiduous search will have to be made of other sources of the infection. This bids fair to accomplish the real solution of the tetanus problem and it is not too much to

¹Index-Abstract of Surgical Technique, Jan., 1910.

hope that in the near future the prophylaxis of this dread disease will be an assured fact.

Already some very important work has been done, and many new facts have been obtained that seem to have a very important bearing on the etiology of this mysterious disease. For instance, the ubiquity of tetanus germs and their spores has been shown, and they have been found in all soil and dirt, especially soil that has been fertilized or mixed with horse manure. All fruits or vegetables are liable to contamination from this dust, and the tetanus organism has been found repeatedly on such articles of diet. Furthermore, numerous observers have found the tetanus germs and their spores in the intestines, so the direct relation between certain food stuffs and the more or less constant presence of tetanus germs in the body is established. Kamen has advanced the opinion that the tetanus organism can and does multiply in the intestinal tract of man, just as it probably does in the horse. If this is so, it is easy to understand that absorption or entrance to the blood stream is of frequent occurrence. The question naturally arises, why then does tetanus develop so seldom?

This brings us up to another phase of the question. The tetanus organism is an obligate germ and must have favorable conditions present before it or its spores can develop and become pathogenic. As previously stated, probably a good many people have tetanus germs in their intestines and even in their blood more or less all the time. They are harmless, however, for conditions favorable to their lodgment in tissue and subsequent growth do not exist. The studies of Vaillard, Vincent and Rouget have a direct significance in this direction, for they have shown that when tetanus spores are introduced ordinarily into the tissues they are promptly destroyed by the leucocytes. But let a small portion of the tetanus toxin be introduced simultaneously, and the spores develop at once with all the characteristic symptoms of the disease. Similar results follow coincidental injection of putrefactive material, or simple chemical agents like lactic acid. In other words, it would seem that the tetanus spores are latent until

activated by special conditions. While as yet these activating conditions are not well recognized there is abundant reason to believe that they exist in certain isolated tissue injuries, particularly those attended by tissue necrosis and putrefactive processes. Mixed infections have also been shown to exert a considerable influence in the development of tetanus.

From the foregoing necessarily cursory consideration of the subject one prominent fact presents itself, and that is that the development of tetanus in any given case calls for the existence of a fairly definite equation, the factors of which are:

1st. *The tetanus germs, or their spores.* (a) These may be carried directly into a wound in the ordinary manner of infection (in which case if the wound is closed, development is rather rapid), although as a rule ordinary aseptic procedures offer effective protection. (b) The germs may exist in the intestinal tract and blood stream but remain innocuous until a nidus occurs that presents the exact conditions essential to their lodgment and growth with development of the fatal toxins. This nidus may result from accidental injury, or it may be presented by any closed surgical wound, no matter how careful aseptic technique has been followed. The existence of a wound with its necessary tissue changes is the one essential detail.

2nd. *The blood or lymph channels.* These are factors in those cases which might be termed autogenetic, in that the infective organism is carried by the blood vessels to the place or point in the anatomy where it becomes pathogenic.

3rd. *The nidus.* This has been already previously referred to and is obviously important, since it provides the soil and certain mechanical conditions essential to the growth of the tetanus germs.

4th. *The activating principle.* In some respects this, next to the germ itself, is the all-important factor in the actual development of tetanus. It is an unknown factor to a large extent, but there is every reason to believe that on its presence or absence the occurrence or non-occurrence of tetanus is largely if not entirely dependent.

In conclusion, it must be apparent that a vast field of investigation is still before us, since the whole tetanus question is still conjectural. But enough is already known of this fearful disease to show conclusively that its etiology is so complex that, for the present at least, the occasional case is quite

beyond surgical prevention. We know enough, however, not to make the mistake of blindly accusing innocent agencies—like catgut for instance—which we of our own act can and should eliminate as a factor in any tetanus case that uncontrollable conditions may thrust upon us.

Catgut Sterilization; What It Means to Practical Surgery.—Nussbaum is quoted as having said that “catgut is without doubt Lister’s greatest discovery.” Other writers are equally appreciative of catgut and it seems to be universally conceded that absorbable sutures, next to asepsis itself, are the most important feature of aseptic surgery. Certainly absorbable sutures and ligatures have greatly extended surgical technique and without their aid, it is extremely doubtful if surgery would occupy anything like its present position.

Several factors have been involved in giving to catgut its special utility, but of all its qualifications the possibility of its perfect sterilization stands foremost.

The Infectious Nature of Infantile Diarrheas.¹—Some authors have disputed the bacteriologic origin of infantile diarrheas and have attributed it to alimentary intoxication or to external causes, such as excessive variations of temperature. M. Metchnikoff, at the last session of the Academy of Medicine, made an important communication which tends to show the infectious nature of infantile diarrhea. He finds that suckling rabbits often contract a fatal diarrhea after having absorbed a small quantity of the dejections of infants affected with acute gastro-enteritis. A young chimpanzee which had been given a little of the green diarrheic injections of a baby of six months was abruptly seized with a severe diarrhea which lasted four weeks, and a second chimpanzee which was given some of the diarrheic matter of the first chimpanzee also had diarrhea the next day. According to the researches of M. Metchnikoff, the pathogenic microbe of gastro-enteritis is the *Bacillus proteus*. Hence, it becomes difficult to hold cows’ milk responsible for infantile diarrhea, since out of every ten samples of cows’

milk, only two contain the *Bacillus proteus*. Moreover many cases of gastro-enteritis are observed in breast-fed children. It seems probable, therefore, that it is not cows’ milk, but rather the persons who care for the infants who communicate the infectious agent to them. The *Bacillus proteus* is very abundant in the dejections of animals (the cow, dog, horse); it is probably carried thence by flies to various food-stuffs, such as raw meat, cheese, grapes, salad, vegetables, etc., which, eaten without being disinfected, carry the microbe into the alimentary canal. The prolonged contact of infected persons with infants is sufficient to contaminate the latter. To protect infants from gastro-enteritis, therefore, it is not sufficient to sterilize the cows’ milk that is fed to them; it is necessary, also, that the hands and the breasts of the women who suckle them should be frequently washed with soap, and that the persons who care for the infants take precautions not to become infected with the *Bacillus proteus*. To this end M. Metchnikoff recommends washing fruits and vegetables, especially salad vegetables, with boiling water, and even singeing cheese crusts.

Conditions Simulating Appendicitis.—

Dr. Alexander B. Johnson of New York read a paper at the recent meeting of the New York Medical Society and offered the following conclusions: (1) A very large number of conditions might simulate appendicitis. (2) Many of them when carefully studied, especially with regard to the past history and present signs and symptoms, would render a differential diagnosis possible. (3) In acute cases, with an imperfect history and an inability to observe the patients during the earlier hours of the disease, an accurate diagnosis might be possible. This would be especially true (a) of perforating lesions of the alimentary tract other than appendicitis; (b) of some affections of a tube and ovary upon the right side; (c) of cases of well developed purulent peritonitis; (d) in the erythema group, Henoch’s purpura, with abdominal symptoms, might so exactly simulate acute appendicitis that no differential diagnosis was possible during the earlier hours of the disease.

¹ Jour., A. M. A., Dec. 11, 1909.

TREATMENT.

Post Partum Hemorrhage; Two Effective Ways of Controlling It.¹—Stewart's conclusions are the following: 1. This term should only apply to the loss of 1000 c.c. of blood after delivery with blanching of lips, air hunger, and pronounced pulse symptoms. 2. A good preventive is to allow the mother to rest undisturbed forty-five minutes after delivery of the child. 3. Hemorrhage several hours after delivery may be checked by the administration of an ounce of vinegar by mouth. Should this be ineffective an hypodermic injection of a similar quantity into the uterine wall will be indicated. 4. A Rose bandage will prevent recurrence of bleeding after it has once been checked. 5. Threatening or existing hemorrhage at the completion of labor may be forestalled or checked by the application of chloroform to the interior of the uterus. This is far superior to any of the preparations of iron.

Treatment of Tuberculous Hip.²—

In the first stage of the disease when there is erosion of the acetabulum, before the ligaments are softened and before there is any question of suppuration, complete rest is the best thing. Then comes the question of how that complete rest shall be secured. Mr. Stonham's teaching puts the whole matter very clearly; the first thing to do is to rectify any deformity that may be present. In order to do that, a weight extension is put on, and one tries, by gradually increasing the weight, to coax the limb into its proper place; it may be done in a week or ten days, but it may take longer. The weight chosen should be such that the child can bear it without any inconvenience and without pain. If a child with hip disease has a weight extension apparatus on and the child is fretful, troublesome, and crying, take some of the weight off; it is too much. In the course of two or three days after that the weight will be able to be increased, and when the limbs are parallel the splint can be put on. With regard to the kind of splint to use, there is nothing like a Thomas. For quite young

children a double Thomas is the proper thing to put on; but in older children, who can get about on the sound limb with crutches, put on a single Thomas. Then comes the question of how long a child should wear a Thomas splint. He should certainly wear it for some weeks after all signs of acute suppuration have subsided. If the splint is taken off too soon and the child begins to get about and use his leg, there will be a recrudescence of the mischief, and very likely the recrudescence will be in a more virulent form than the original disease. Mr. Stonham generally makes children who have had undoubted evidence of hip disease wear a Thomas's splint for a year. But there may be another thing which may influence the duration of the wearing of the splint, and that is if the disease tends to progress. So long as the child is not getting worse, so long as he is improving, let him wear a splint by all means. Directly there is evidence that suppuration is taking place in the joint, that there is increasing pain on slight movement, a Thomas's is of no use; it is necessary to carry out some surgical procedure.

GENERAL TOPICS.

Medical Missionaries in China.¹—When all the annals are written, telling of the unselfish devotion and sacrifices of those who have taken up medicine as a life work, high on the scroll of efficient service will appear the history of the medical missionaries to China. A recent issue of *Yen-jin* (the Dust of Peking), published in the Chinese capital, contains an interesting article on the "medical mission" in China, contributed by a Japanese physician attached to the Mikado's legation at Peking. At the outset the writer says that his inquiries into the actual conditions of the hospitals and medical schools maintained by Christian missions were made in Northern China, in the Yangtsu valley, and in Manchuria. While he does not ignore the work of the Catholic missions, his attention seems to have been devoted particularly to that of the Protestant missions, representing 64 boards. He says:

¹ D. H. Stewart, M. D., Amer. Jour. of Obstet., January, 1910.

² The London Practitioner, January, 1910.

¹ Review of Reviews, February, 1910.

In China to-day there is not a church which has not a medical practitioner or a hospital attached to it, while more important churches even maintain a medical school. Some of such practitioners and institutions are out of date, but most of those hospitals and schools which have lately been instituted are modern in every respect, being equipped with well-trained physicians and instruments of the latest type. Foremost of such well-equipped institutions stands the Union Medical College or the Lockhart Medical College at Peking, which maintains a hospital known as the Peking Hospital. This college is identified with four Protestant missions of England and the United States. The Peking Hospital was inaugurated in the spring of 1907. The cost of the buildings and material equipment alone is estimated at \$150,000. Its grounds are extensive enough to permit of the addition of more buildings as the institution grows larger. All the buildings are supplied with steam heat and electric light. Besides numerous class-rooms, there are spacious lecture halls. Every student is furnished with a microscope for his exclusive use. At present there is no class higher than the third year, or junior class. The expenses of the school and hospital as well as those of the students are defrayed by the four mission boards. The students are enlisted from among the graduates of middle schools and colleges under the auspices of various missions. Although they invariably understand English, lectures are given in Chinese, as the foreign instructors are well versed in the native language. I was told by several students that it was far easier for them to learn their lessons when lectures are delivered in their own language than when they are given in any foreign tongue. As the student is required to pay only 100 taels (about \$55) for tuition, board, and the use of instruments, the mission boards have to render him a considerable financial assistance. When the institution was inaugurated, the late Empress Dowager donated 100,000 taels. Besides, this, various departments of the government have also contributed small sums from time to time. To meet its growing expenses the institution requested the Chinese Government to grant an annual subsidy, but the government has so far come to no decision about the matter. The rooms in the hospital are divided into three classes. The rates for the rooms are 4 to 6 Mexican dollars per day first-class, 3 Mexican dollars second-class, and 30 sen third-class. The third-class rooms are for those who need charity, but in addition to these there are rooms provided to receive patients absolutely free of charge. The hospital has twenty foreign physicians, who are also instructors in the college.

According to this writer the entire force of medical missionaries of the various Protestant missions numbers no less than 300, while the number of Chinese physicians trained by these missionaries is estimated

at 5,000. There are some 250 mission hospitals throughout the country, and the yearly total of patients received by these hospitals is said to be 2,000,000. One of the most commendable features of the medical mission in China is a spirit of co-operation existing among the different schools and hospitals.

Besides maintaining hospitals and schools the missionaries in China are disseminating medical knowledge among the native students by the publication of books translated from Western languages. They also publish a monthly magazine called the *China Medical Journal*, boasting of twenty-two years of existence. A committee of specialists has been at work with a view to selecting the most appropriate Chinese words for technical terms in medical science. Its labors have resulted in the compilation of a medical dictionary containing some 15,000 words. While some translations are made from antiquated books, these are gradually being replaced by translations from the latest publications in England and America.

SURGICAL SUGGESTIONS.

Ligation of the cystic artery at the beginning of a cholecystectomy often makes the removal of the gall-bladder a bloodless procedure.

A short drainage tube, and its early post-operative removal, are perhaps the best safeguards against the formation of an empyema sinus.

By frequent feeding every two hours, an obstinate biliary fistula may spontaneously close.

Unilateral deafness without known cause, associated with facial palsy on the same side, should suggest a lesion in the posterior cerebral fossa.

Meltzer's sign—pain on active flexion of the hip, with the knee extended, while the examiner presses firmly down over McBurney's point—is a most valuable corroborative evidence of appendicitis. It is not intended for cases in which abscess is palpably present.—*Am. Jour. of Surgery.*

American Medicine

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The fee question is always a serious one to the medical profession, especially to the general practitioner. Why is it that in the psychic make-up of the average human being, there is such an aversion to paying a doctor's bill? Probably there are several reasons for the widespread existence of this reluctance to pay for medical services; certainly it is a transitory affection, for every physician knows how willing most patients are to reimburse the doctor when in pain or in need of his ministrations. No one who has ever heard a husband or father urging a physician to make all possible haste to attend a suffering wife, or a sick child, can question the sincerity of the promises to pay, promptly and generously. The promiser means what he says—when he says it. But when the danger is over, it is strange how the perspective changes. Services that in prospect seem invaluable, in retrospect become valueless. The perspective sense is, therefore, at fault in this matter, and responsible for the antipathies that suddenly develop when a physician asks his wage. All this constitutes one of the darkest and most unpleasant features of medical practice, and many a medical man has learned—usually too late—that the pay-as-you-go plan is the only way a doctor can get a fair return for his hard conscientious work. In other words, *the time to collect is when a patient realizes his needs, not when the doctor needs to realize.*

The preceding remarks have been suggested by the reports of a recent decision in a Georgia court of law. A physician in that state, which like many another member of the Union, has been undergoing more or less legislative upheaval for some time, sued a father for services rendered to his child of tender years. Unfortunately the child died. The court held, therefore, that in consequence of this fact, it was apparent the physician's services were unsuccessful, and the father was under no obligations to pay for same!

Judicial asininity is not unknown. It is too much to expect that a kind and beneficent Providence will not lapse as often when selecting men for judgeships as for any other calling. In view of the high order of intelligence, to say nothing of the other qualifications required to make a judge of even ordinary usefulness on the bench, it is truly remarkable that the Power that watches over us does not make more mistakes, and place us more often at the mercy of some judicial pin head. Lucky indeed are the American people that the ideals of their courts—from the lowest to the highest—have done so much to develop a judiciary of exceptional intelligence, unimpeachable integrity and above all, of sound common sense. It is the rock on which our whole social organization has been built, and it must constitute our refuge whenever our personal, political or social rights are assailed, or menaced.

The decision referred to above to the effect that since the patient died the attending physician could not recover for services rendered, is little less than startling. It does not seem possible in the event of the conditions being exactly as described, that the higher courts will fail to reverse the verdict. Of course, there are several things to be considered and without full and complete data it would be ridiculous to express any hard and fast criticism concerning this Georgia decision.

The contingent fee in the United States is almost unheard of among ethical and reputable physicians. The quack physician makes much of "no cure, no pay" but since he takes the stand of no pay, no treatment, and usually exacts a good big fee in advance, it is a rather empty claim. The honorable physician bases his charges on the services rendered. There is but one object in view, to secure the best possible result, in the best possible way and in the shortest possible time. It is possible that the physician suing in the case under discussion made some contingency concerning his pay in the event of the non-success of his treatment. It is possible that the physicians of his locality, for local reasons, treat all or part of their cases on a contingent basis. If it could be shown that this was the custom of the locality, we can understand how the court might hold, in the event of absence of a definite understanding between the physician and the father of the child, that death of the patient abrogated all claims of the attending physician.

To the best of our knowledge and belief Georgia physicians are practicing on no other basis than that followed by the other

ethical physicians of the country. There is nothing in the reports of the case to point to the fact that the suing physician took the case on a contingent basis. The holding of the court that the death of the patient invalidated the claim of the physician for services actually rendered, is, therefore, apparently a grave miscarriage of both law and justice. The error is so palpable that it must be corrected by the next court. The whole practice of medicine as it stands to-day is jeopardized. To force physicians to take up contingent practice would strike at the very foundation of honorable medicine. No physician can conscientiously predicate his results in any case. Every physician, in assuming charge of a patient, contracts to use diligent care as defined by the requirements of each case, and to use ordinary skill as defined by the standards of other practitioners of the same school, in the given locality. Each physician may exercise as much *more care* or use as much *greater skill* as lies within his power. Under our present fee system of charging for services rendered, every physician assumes the moral obligation of doing his utmost. It is the most honorable, fair and sensible system and insures the highest type of service. It recognizes the limitations of the medical attendant, the possible development of new and unavoidable complications, and makes the patient assume his own share of responsibility. From every standpoint it is best for the patient, fairest to both patient and physician, and maintains the dignity, honor and ideals of the conscientious practitioner. It creates no false hopes and promises nothing but the best possible service.

The contingent fee, however, is open to all manner of abuse. It creates false

hopes, puts a price on dishonesty, and lowers the whole practice of medicine. It makes a practitioner a tradesman, a bickerer, and often a gambler who takes a long chance. It fits in with quackery and charlatanism, but it has no place in connection with scientific medicine.

The ruling of the Georgia court should, and certainly will arouse widespread indignation among honorable physicians if on closer examination it proves to be as unjust and ill founded as it now appears to be.

The discussion of the venereal peril in lay literature is a desirable outcome of efforts made in that direction for a number of years. It has long been known by all physicians that no headway was possible in the crusade against this plague, until it became a popular movement. The stumbling block was the very natural repugnance to discussing such affairs in any periodicals which reach the family circle. The smug middle-class man has always assumed that his daughters were feeble-minded things who could not understand their own organization or the world in which they live, but happily the girls are resenting the reflection on their intelligence. They rightly insist upon knowing what is to their interest. Now that they know that 80 or 90 per cent. of their surgical troubles in married life and many of the deaths are the results of immoral conduct of boys, they are most laudably declining to be murdered any further. In other words, our ideas as to what is proper for "the young person" to know, have undergone a remarkable change in the last few years. Editors are suddenly realizing that these matters are not only fit to print,

but that there is an actual demand for them. So we are not at all surprised at seeing in family-circle magazines, articles formerly confined to medical literature. It is a good sign of an awakened conscience whose lethargy has hitherto allowed the destruction of the best of our women or invalidated them or sterilized them. Our young folks are not defiled by knowing what might defile them, but they are forewarned and forearmed and able to avoid defilement. They who know all about gonorrhea and live healthy lives, are far better off than the old-fashioned "pure in heart," who died of gonorrheal complications in utter ignorance that there was such a thing. So let the good work go on, even if it drives three-fourths of our gynecologists out of business for lack of cases.

The cooling of hospital wards in hot weather has been neglected in a manner amazingly stupid. Although it is an easy, cheap and perfectly practicable thing to do, we yet allow the dreadful summer mortality to continue year after year. When a sweltering hot wave comes and the sick begin to drop off and we can actually calculate in advance the daily number of extra deaths for each degree the thermometer rises, we throw up our hands helplessly and beseech Heaven to send a cool wave, utterly oblivious of the fact that the Lord helps those who help themselves—and helps precious few others. We know to a certainty that cold air will save the lives of the sick, and yet we won't give it to them until after they die. The dead rooms are kept cool and why not the living rooms when engineers have already devised methods of doing it? Medical literature is full of learned papers showing

how certain diseases are cured in the cold air of winter, and not in summer; hospitals now use the roof, verandahs or any old thing to get the patients out where they can breathe cold air; we are regaled by doleful tales of the awful results of hot weather; and yet it does not seem to have occurred to a soul among us to install an air cooling apparatus which will keep down the ward temperature in summer so that the patients will get well.

It is possible to keep a ward at any temperature we desire, and well ventilated too, at a cost so trifling that in comparison to the life saving, the expense is nothing. Why are we so slow? Hospital trustees, wake up! Find the money and use it, so that the little tots saved in summer will rise up and call you blessed. Ladies of the ice charities! Why don't you get busy too? You know only too well what a world of good you are doing by furnishing ice to the sick, so why not extend your influence further and see that they get the only thing which will save them in our hot weather—fresh cold air to breathe and plenty of it. Any cold storage engineer will tell you how it's done and any doctor will explain its value. Office buildings are cooled in summer to keep a man well, but if he sickens, he must swelter to death in a hot ward, when for a few dollars spent on air cooling apparatus he could recover. We are in a very unnatural climate, much colder in winter and hotter in summer than our northern physique can stand, yet we seem to think that heating the house air in winter is all that is necessary, whereas it must also be cooled in summer. So let us do it at once. In particular we desire to call this matter to the attention of that new and estimable society for the prevention

of infant mortality. Recent observations have shown that every degree over 80° adds to the difficulty of recovery from any disease, and the higher the temperature the higher the mortality. So insist upon having some rooms which can be kept below 70°, then in hot weather rush in the gasping babies, rich or poor, and watch them get well without any other treatment worth mentioning. Then you will be doing something practical and the Lord will help you without the asking. If, as many of our best men believe, the infantile pneumonias must have very cold air in winter, why in the name of common sense, don't we give it to them in summer too?

Post dysenteric conditions were described by Mr. James Cantlie of London in an article recently published in the *Journal of Tropical Medicine*, and though he was not entirely supported by those present at the reading of the paper, he called attention to some matters which are of importance to physicians of all climates. In the first place, he shows what the American physicians in Manila have long known; namely, that the lesions of amebic dysentery are not infrequently confined to the lower end of the descending colon and sigmoid or to the latter or even to the rectum. What he now emphasizes is the frequency with which stricture or cancer is later found in these situations in after years. He thinks there is a natural tendency for such conditions to occur at the end of the sigmoid from the anatomical shape of the parts and though this may not be the cause, it is well to know the fact of this localization. There is a well grounded suspicion that amebic infection is much more common in America

than the general profession has hitherto believed. Even in the tropics, quite an extensive infection can exist without symptoms, and it would not be at all surprising if many cases in cooler climates go on to ulcer formation unrecognized. If it is true that in such cases the trouble is localized in the sigmoid or rectum and later becomes the seat of dangerous cicatrices or malignant growths, its importance is quite evident. Luckily the ordinary case does not form ulcers, but leaves a mucous colitis which, though quite persistent, is amenable to treatment and eventually disappears unless there has been much thickening of the submucous connective tissue. Perhaps we are on the track of clearing up the etiology of a large group of intestinal cases which have hitherto been looked upon as not due to any infection at all. The ameba may have these far-reaching effects and deserve more investigation in America.

The Mode of Infection in Poliomyelitis.

—In a previous editorial communication occasion was taken to mention the importance of recognizing diphtheria when present in the nose.

It is well known that the mucous membrane of the upper respiratory passages permits free osmosis of fluids, a fact which is manifest in the one direction when any irritant is applied to them and is followed by a copious outflow of secretion, and in the opposite direction by the great rapidity with which such toxic substances as cocaine are absorbed into the general circulation when applied directly to the nasal or pharyngeal tissue.

In a recent communication to the *Journal of the American Medical Association*

(February 12th, 1910) Drs. Flexner and Lewis, following up their preliminary report on epidemic poliomyelitis in monkeys, describe what they believe to be a mode of spontaneous infection. The groundwork for this investigation was laid some three years ago when it was discovered that upon infecting a monkey with *diplococcus intracellularis* by injecting cultures of this organism into the spinal canal, migration of the diplococcus into the nasopharynx readily took place. Organisms contained within leucocytes and lying free outside of them were found upon microscopical examination. Hence the authors cited concluded that the nasopharynx is probably both the site of origin and of elimination of the meningitis germ in man.

Following the same method in their untiring efforts to determine the nature of poliomyelitis, Flexner and Lewis have been able to produce paralysis and to prove that the nasal mucous membrane contains the virus of this disease. When a properly prepared solution of an excised portion of nasal mucous membrane suspected of containing the virus was injected into the brain of a monkey, it set up characteristic symptoms including the complicating paralysis of poliomyelitic infection. Paralysis also followed the inoculation of the fluid removed from the spinal canal when injected into the brain.

The value of this experimental result is very great in showing that the same path by which infection is introduced into the system through the nasopharyngeal mucosa is followed when the virus is eliminated in reverse order.

As a corollary to this demonstration it would seem desirable to attempt prevention of epidemic infantile paralysis and also of cerebrospinal meningitis by dis-

infecting both the nose and mouth in an effort to destroy the secretions in which the infectious excitant of either of these diseases may possibly exist.

The authors state that studies are now being carried on relative to the resistance of this poliomyelitic virus to the disinfecting agents most commonly employed. It is to be hoped that some drug will be found which will kill the micro-organisms without at the same time injuring or destroying the delicate structures upon which they live and grow. To this end the much-discussed lactic acid bacilli may yet prove helpful, but of course little or nothing can be said upon this subject until the investigations now under way are completed.

It is likely, however, that not only meningitis and epidemic infantile paralysis are thus conveyed into the system, but that many other infectious diseases also here find a portal of entry, which has hitherto been very generally overlooked. For when one recalls the anatomy of the upper respiratory passages, their great vascularity and the large content of lymphoid and glandular tissue, it can be readily conceived that such a soil is very rich in the essentials for the propagation of disease excitants.

We shall await further reports on this subject with much interest.

Attacks on house disinfection are becoming so frequent that it would not be at all surprising if the medical profession were to reverse present beliefs. Before we knew what were the infecting agents and how they reached us we were like men fighting enemies in the dark. We fired our ammunition haphazard and naturally wasted most of it. Soldiers always riddle a

hill with bullets until they locate the trenches of the enemy and then every shell is exploded where it kills. Similarly we wasted millions of dollars in yellow fever disinfection until we located the enemy entrenched in mosquitoes, and now we ignore everything but these insects. The increasing evidence that infected persons are the main, if not the only ones, who harbor living pathogenic organisms, is the cause of the present discussion. Of course there are some parasites which can retain vitality quite a time after leaving our bodies, but it is undoubted that most kinds perish more or less promptly. The discovery of more and more "carriers" formerly unsuspected, explains those remarkable instances in which "fomites" were formerly believed to live a long time adherent to dead materials, such as clothes and houses. It has been positively proved that certain recurrences of small pox were due to the importation of a new mild unrecognized case and not to infected clothing left over from the previous epidemic. Hence we see an increasing desire to disinfect or isolate persons and not things.

The ineffectiveness of much disinfection is the point made by M. Comby, physician to the Paris Children's Hospital, and the foremost European apostle of the new crusade. He shows that the means used would not necessarily kill the organisms even if they were alive, and that measles and scarlet fever are really transmitted by convalescents or apparently healthy "carriers." He even presents facts which show to his satisfaction that the desquamated scarlatinal skin is not nearly so often the carrier as we now think—indeed there are doubts as to its virulence at all—but even if it were dangerous the ordinary fumigations and

fluids could not sterilize it. He is therefore preaching against what he believes to be ineffective disinfection, with the hope of starting a new and effective system of isolating the carrier. Our own Chapin of Rhode Island has conclusively proved that far better results are obtained in diphtheria if we ignore things on which the bacilli promptly die anyhow, and devote our attention to the convalescents until we are sure they cease to be carriers. All this is of extreme importance, for it shows that we allow children to go back to school too soon, and permit convalescents generally to spread disease broadcast while the health authorities are spending time and money poisoning the dead germs on the house walls. When Chapin presented his evidence to the Section on Hygiene of the A. M. A. some years ago, he was amazingly misunderstood and denounced, but he is now coming into his own. We can confidently predict as great a change in preventive methods in every disease as has occurred in yellow fever, but not until the exact ways of transmission are known. The sooner this is accomplished the better, for we have permitted an enormous amount of disease by our delay in recognizing the "carriers" and by wasting our time on the germs which had died.

Street cleaning is second only in sanitary importance to the sewage problems of every large city. Now that practically every self respecting community has in operation a sewage system of more or less efficiency, the question of how to secure and maintain clean streets must be taken up and answered. It is no idle statement that unclean streets are more responsible for the propagation of present day diseases

than any other one factor. To go into comparative consideration of the various dangers of urban living is not necessary; the evident evils of filthy thoroughfares tell their own story all too plainly. The fact remains that our Boards of Health, health officers and sanitarians can never expect great or lasting reductions in the mortality rates of the air borne diseases, until clean streets are a verity instead of an ideal. The proposition is a many sided one, and presents problems that must have the best thought of the engineers, the mechanics, the contractors, the bacteriologists, the chemists, the physicians and the sanitarians. Fortunately the development of the automobile bids fair to decrease the most serious feature of unclean streets by forcing that noble but none the less execrably filthy beast, the horse, into the background. Few realize it, but it is a fact that the feces of the horse are more dangerous, bacteriologically, than those of any other animal; in fact are second only to human feces in pathogenic possibilities. The automobile is, therefore, helping to solve other problems than those of transportation, and the probable improvement in the sanitary conditions of city streets that will follow the wider use of automobiles will constitute not the least of the ultimate benefits of the horseless vehicle.

The so-called antiseptic barber shop of to-day is in reality a myth. Even the best of the better barber shops fall far short of the aseptic precautions that ordinary common sense would seem to dictate. That this is a fact will be borne out by the simplest investigation one cares to make of practically every one of the up-to-date shops of to-day. It is not meant to imply

that any of these shops fail to keep their utensils clean or to use clean linen, but it is meant that a real state of antiseptic cleanliness is almost never obtained. Our knowledge of the need of antiseptic methods, raises the question whether or not the use of a common brush, soap and razor is not a fairly frequent source of skin infections, and as a consequence the prime cause in many of the skin lesions constantly being met. It is not unreasonable to fear that the shaving stick, brush or razor used on a person whose face is broken out with any of the common forms of eczema, acne or the more severe skin lesions, is extremely liable to be a factor in the spread of such diseases, unless these implements are properly subjected after each shave to some effective sterilizing process.

In many shops, however, the latest method of applying soap is now being used. This is in the form of a powder applied to the brush that has previously been wet. Surely a step in the right direction for each customer thus has at least his individual soap. It may not be feasible to have individual brush and razor always, but it is always possible to have these implements rendered absolutely sterile before use, since this can be easily and effectively accomplished by thorough immersion in boiling water.

The time is surely coming when every man with ordinary development of the precautionary sense will refuse to patronize any barber shop that fails to use reasonable aseptic and antiseptic methods. As a matter of fact the safety razor deserves all the praise it is given, if for no other reason than that it has helped to deliver many a man from the dangers of indiscriminate barbering.

Plague infection of the ground squirrels of the Pacific Coast is proving to be a much more serious matter than was thought when it was first discovered that the flea had carried the bacilli from the city rats to these country rodents. Dr. Colby Rucker, of the Public Health Service, whose efficient work in San Francisco has been mentioned in connection with the Plague crusade of Dr. Rupert Blue, has been organizing a scouting expedition to determine just how far the infection has spread, and preliminary reports of his work show a somewhat alarming condition—infected squirrels having been found in widely separated places in one county with evidences that other counties are also involved. Plague is therefore a disease to be expected in human beings for some time to come in the United States for the bacillus has obtained a foothold. As the extermination of the squirrels is apparently impossible, the spread of the disease throughout the continent by the squirrels, prairie dogs and other rodents, depends solely upon whether they have sufficient tolerance to keep the bacilli alive, or whether they will die off so quickly as to prevent the germs being carried, as happened in the efforts to kill off the rabbits of Australasia. It is now known that the bacilli are normal inhabitants of certain rodents in Eastern Asia, only occasionally making excursions into the bodies of rats, and always dying out in their new homes, incidentally destroying some millions of rats and human beings. The rats are known to have enough tolerance to spread the bacilli, and it is feared our feral rodents will do the same.

The appalling results of contempt for sanitation are illustrated by this wide spread of plague bacilli in America. San Francisco's labor unions elected to the

mayorality a fiddler who has since been sent to prison for crimes connected with his administration. It was he, who, at the probable instigation of certain business men afraid of publicity, not only denied the presence of plague in the city, but punished those who said there was. At the very time that well directed efforts would have completely destroyed the infection, it was concealed and allowed to spread until it began killing the inhabitants. It has now escaped beyond their borders, and if the fears of its further spread across the continent are realized they will be the causes of an appalling number of deaths. They have at least created a situation full of menace to the rest of the country, and the question naturally arises as to whether one community is to be permitted to jeopardize others in this criminal manner. Several times in England it has been found that the rats, near the docks of ships from plague countries, were infected, but prompt measures eliminated the danger at once. That could have been done here if a central health authority had had control.

The main lesson from San Francisco's conduct is the necessity of electing men of intelligence—attainments and honor—to positions requiring high executive ability. All men are not equal, and low morality is generally a result of low mentality. English workingmen for generations refused to be represented in Parliament by anyone except a "gentleman"—gentle born. They are now sending their own representatives and it is hoped the experiment will turn out better than in San Francisco, a city which, in spite of its noble and brave conduct after the fire and earthquake, must accept the contempt of the civilized world for permitting plague to enter the

country and create a menacing situation which may require hundreds of millions of dollars to save our lives, if the infected ground squirrels are not promptly destroyed. Neglect or defiance of sanitation is dangerous business, at any time, but to jeopardize the whole nation for the sake of a little temporary business, shows that the guilty people are not possessed of sufficient common sense and forethought to be entrusted with the franchise. It is hoped that all cities will learn a lesson from San Francisco's crime, elect only "gentlemen" of proved executive ability and honor to offices requiring those characteristics and then support the sanitarians in their efforts to protect the community. It is the cheapest in the long run, as common sense should have taught, but in electing the notorious fiddler they showed that they were not possessed of common sense at that time. It is quite proper for laboring men to organize for their own protection, but if they aspire to rule as in San Francisco, they must not do injury to the health of the country or there will be an overwhelming demand for their suppression.

Wisdom from the mouth of babes comes at unexpected times, but it is not anything new for children to prefer an unwise therapeutic nihilism. Their objection to being dosed is perhaps an animal instinct inherited from ancestors who did nothing but rest and starve when ill, allowing nature to preserve the most resistant. Indeed it is not so long ago that our own survival compelled us to kill the sick, for men had all they could attend to in keeping themselves alive. Perhaps this brutal custom improved the physique of savage races by preventing the procreation of

those who became ill. Some, if not all, species of monkeys deliberately worry the sick to death if not actually killing them. Be that as it may, it is undoubtedly true that sick children have the animal desire to do nothing, and sometimes they are right. A little boy, convalescent from whooping cough worried his mother so much by an occasional cough, that she said, "My dear boy, what can I do for you?" "Just let me alone until I get well." Could we not take this to heart and could not all mothers too, in the case of convalescents, without being accused of therapeutic nihilism?

Caisson disease seems destined to be of increasing importance because the progress of civilization and the congestion of population are creating more and more need of tunnels and bridges, the construction of which requires the laborers to work in compressed air at great depths. The cause and prevention of the disease are well known and yet, in spite of all precautions, cases continue to be produced and show the need of further investigation. It seems a simple matter yet there are curious accidents proving that it is far from simple and that there are individual as well as seasonal variations in susceptibility. Under compression more gases are dissolved in the blood and if decompression is rapid, these gases must escape as when a champagne cork is withdrawn, and the bubbles of gas in unyielding cavities press upon nerve tissue, and arteries, causing paralysis which may be temporary if the gas is reabsorbed or permanent if the tissues are lacerated or lose vitality. Prevention is merely such slow decompression that the gases escape by the lungs and do not bubble out elsewhere. The

body fluids act like champagne which has become flat from a leakage through the cork.

Newly discovered factors in caisson disease are of considerable importance. It has long been known that the longer the exposure to compressed air, the more gases must be dissolved in the blood and the longer must be the period spent in the air lock. Seasonal epidemics have an unknown relation to the outside temperature and the barometric readings which in some way influence the escape of surplus gases from the blood. Still, it seems remarkable that the state of the weather should have the least effect if the workman has gotten rid of the surplus gas before he leaves the chamber. It is said that light exercise aids the escape of gases, as we would suspect from the increased circulation of blood. Workmen are often prostrated as a result of the exercise taken after leaving the locks, and it seems a wise precaution to compel light exercise during decompression but complete rest for a short time after emergence.

The last thing discovered is the fact that big or obese men suffer more often than the little or spare. (Boycott and Damant, *Journal of Hygiene*, Sept. 1908.) This is no doubt due to the greater difficulty of getting rid of the gases in the bodies of the bigger men. Such workmen must therefore spend a longer time in the air locks and the pressure must be reduced more slowly than for the others. Perhaps big men should be excluded from such employments. As the disease is really a traumatism and absolutely incurable after the damage is inflicted, prevention must be carried to the greatest extreme, though it must be confessed that men will always take unwise risks and that cases will always occur.

ORIGINAL ARTICLES.

WHY WE ARE WHAT WE ARE—THE PROPER FUNCTION OF THE MEDICAL SOCIETY.¹

BY

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Ten years ago matters in the medical profession were pursuing the even tenor of their way; there were no clouds above the horizon. No important question was agitating the medical mind. No recent revolt against the existing order of affairs had created animosities. But in this medical calm those who thought, and not only thought, but acted, believed that the time had arrived when a new organization should be formed which should attempt to reach a higher ideal than that which had either been conceived for or attained by a medical body. An aristocracy of membership as well as the highest standard of scientific achievement was the end toward which their efforts were exerted. Incidentally, social intercourse should occupy an important position, and that a new fraternity should comprise the five boroughs of the greater city.

To accomplish these results a method of government was adopted which should be representative in constitution, deliberative in plan but efficient in action, which should eliminate the personal and the partisan, but which should be effective in carrying out the high ideals of the founders of this Association.

The minor details of administration, the financial questions and the initiative of scientific work have been confided to the Council where frank suggestion, free discussion and prompt action are secured. The results come before the Association for criticism and approval or rejection. In this way, the time of the meeting, valuable for professional betterment, is not encroached upon. A high standard of membership has been insisted upon, predicated upon the ascertained reputation as a gentleman and as possessing scientific attainments, and, further, as legitimately practising some branch of the art and science of medicine. It was at the outset believed that five hundred should be the limit of membership, but a waiting list of men amply qualified by character, education and accomplishment, made it necessary to set seven hundred and fifty as the number beyond which this Association may not go. With a membership of character and position, selecting a representative Council imbued only with a purpose to faithfully carry out the wishes of the Association, we have been singularly free from the scandals which have fostered animosities in the larger societies, and which have brought the profession into general disrepute from their having been noticed and unfavorably commented upon in the lay press. It is unlikely that our harmony will ever be disturbed by this cause.

No less careful attention has been directed toward the scientific work of the Association. Topics have been carefully chosen upon which the papers would either elucidate the newer problems of medicine or present real advances in the subjects in which the interest is always vital. The limitations have been such that the major importance would appeal to those working in

¹Presidential Address, delivered Feb. 21st, 1910, before the Medical Association of the Greater City of New York.

the broader field, while, by no means, a minor interest would be for those engaged in more special work. There has been no subject presented of such close limitations that one, no matter how narrow his special work might be, could not profitably devote an evening for its consideration. The personality of those taking part in the discussions has received even more painstaking care. To limit the garrulous, to restrain the needlessly argumentative, to eliminate the repetition of statements already accepted, and, most important of all, that the discussion shall be representative and of a high order, and worthy of the paper, has been by no means an easy task in its accomplishment. The medical or surgical exploitations, the extravagances of statement or of results, the conclusion based upon insufficient premises or misinterpreted bases, have been conspicuously absent. This Association has never been treated to a discussion upon "how to sew up a gastric neurosis," which might be interpreted as a commentary upon the inefficiency of a common school education or the unwitting audacity of crass medical ignorance. An extension of the plan which has hitherto prevailed and which the character and attainment of the membership of this Association warrants the attempt, is the presentation of the facts—what we really know about certain subjects. Such subjects might be those to which much attention is given in the lay press. It is unnecessary to mention that this exploitation of men and methods has often been hysterical, frequently misleading and sometimes intentionally so, generally but little, if any, better than that of the advertising charlatan, and altogether improper for professional gentlemen. The purpose of this exploitation is obvious; its results unfortunate for the health of the

lay public and for the credit of the profession. As some of these pseudo-scientists and fantastic therapists are quasi-reputable practitioners, the evil which they do is correspondingly increased. Such subjects readily suggest themselves and very properly can be presented before this Association for judgment which shall be final at the time of its presentation. The Year Book of scientific work which the Association has published—if this last suggestion be adopted and followed—will become even more valuable and more eagerly sought after by those not members, than before. This record compensates, to some extent, the loss which unavoidable absence from a meeting entails, and will undoubtedly be an additional attraction for those who are to comprise the new class of membership—the non-resident.

The social features that have always been prominent, not only in the regular, but as well in the special Borough meetings, have subserved a double purpose, not only to promote a better acquaintance in our membership and a consequently better understanding of the man and his attainments, but to enable the distinguished visitors to the Association to be more completely our guests and feel themselves more cordially welcome.

Such have been our aims, and the imitation of our methods by other medical organizations is certainly positive, if not entirely disinterested evidence of our success in attaining the present high standard of this Association along the three lines which have already been indicated.

In reading recently the *Journal Intime*, under date of September 6, 1851, the inimitable work of Henri-Frédéric Amiel, I found the following impressions recorded after a critical study of de Tocqueville's

Democracy in America: "This book has on the whole a calming effect on the mind, but it leaves a certain sense of disgust. It makes one realize the necessity of what is happening around us and the inevitableness of the goal prepared for us; but it also makes it plain that the era of mediocrity in everything is beginning, and mediocrity freezes all desire. Equality engenders uniformity, and it is by sacrificing what is excellent, remarkable and extraordinary that we get rid of what is bad. The whole becomes less barbarous, and at the same time more vulgar.

"The age of great men is going; the epoch of the ant-hill, of life in multiplicity, is beginning. The century of individualism, if abstract equality triumphs, runs a great risk of seeing no more true individuals. By continued leveling and division of labor, society will become everything and man nothing.

"As the floor of valleys is raised by the denudation and washing down of the mountains, what is average will rise at the expense of what is great. The exceptional will disappear. A plateau with fewer and fewer undulations, without contrasts and without oppositions, such will be the aspect of human society. The statistician will register a growing progress, and the moralist a gradual decline: on the one hand, a progress of things; on the other, a decline of souls. The useful will take the place of the beautiful, industry of art, political economy of religion, and arithmetic of poetry. The spleen will become the malady of a leveling age.

"Is this indeed the fate reserved for the democratic era? May not the general well-being be purchased too dearly at such a price? The creative force which in the beginning we see forever tending to produce

and multiply differences, will it afterward retrace its steps and obliterate them one by one? And equality, which in the dawn of existence is mere inertia, torpor, and death, is it to become at last the natural form of life? Or rather, above the economic and political equality to which the socialist and non-socialist democracy aspires, taking it too often for the term of its efforts, will there not arise a new kingdom of mind, a church of refuge, a republic of souls, in which, far beyond the region of mere right and sordid utility, beauty, devotion, holiness, heroism, enthusiasm, the extraordinary, the infinite, shall have a worship and an abiding city? Utilitarian materialism, barren well-being, the idolatry of the flesh and of the 'I,' of the temporal and of mammon, are they to be the goal of our efforts, the final recompense promised to the labors of our race? I do not believe it. The ideal of humanity is something different and higher."

This comment upon de Tocqueville, at once a sympathetic and critical student of the conditions in our country, is today largely true, in spite of the development of a small but common plutocracy and an enormous and arrogant proletariat, both undreamed of by that brilliant philosopher of 1840.

The bearing of the conclusions here presented is not alone upon medical organizations such as this Association, but upon the profession as a whole. As for this Association the time was opportune for an organization having for its purpose higher aims and a carefully chosen method for their attainment. The brilliant results achieved, place all questions of this sort beyond argument.

The profession at large, however, if one may so interpret the medical journals, is

by no means secure in attainment or comfortable in existence. That the altruism, for which the medical profession has always been noted, has increased by leaps and bounds, is evident to even the most superficial observer. That this altruism is abused by those unworthy of it and by those who are both unworthy and unappreciative, is equally apparent. The remedy is not easily to be decided upon. Commercialism has been advocated in some quarters; it has doubtless a respectable following in numbers if not in reputation. Its adherents seek to dominate, in fact, do dominate some organizations whose titles are misleading. Thus it is that some exponents of this theory, and those especially whose livelihood is based on border lines in medicine or is clearly parasitic, have set themselves up as leaders to extricate the practitioner from professional duties and lead him into commercial ethics, as if this were either necessary or even desirable if necessary. Unfortunately, for the lasting success of those self-styled leaders, their previous character and scientific attainments constitute a record which entails a constant warfare of defense against the better elements in the profession. It may be, and undoubtedly is true, that the real value of professional services is today far greater than the ability of the patient to pay for them. It is a fact that the science and art of our practitioners have been advanced in their practical application far more rapidly than has the financial condition of our patients. It is also a fact that the proletariat is extraordinarily reproductive, and is becoming yearly a greater burden not only upon the profession but as well upon the State. But the remedy is not a trades union so earnestly advocated by one whose right to be a member, much less a leader, of the profession,

is openly and successfully challenged. It does not lie in any scheme whereby professional defectives may impede medical progress. The Darwinian theories have been largely accepted by the medical profession as they should be applied by its members. The remedy lies in the adoption of such methods as will enable the profession to give better service to the people; a service that is so eminently scientific that its results shall be apparent to all intelligent patients. From these, having received the best of professional science, will come proper material appreciation. The ignorant and unappreciative are properly satisfied with the work of charlatans in or out of the profession. It is true that commercialism is rampant in the land. Its influence has been felt in our profession for the number of students entering the schools is diminishing and, unfortunately, there is greater proportional loss in institutions whose entrance requirements are highest, whose instruction is most advanced and thorough, whose final tests are the most exacting, and, finally, whose equipment is of the best. But so long as medicine continues to be the noblest of professions, the best trained and equipped intellects and the noblest characters will be attracted to it. When it becomes the most despicable of trades this Association will have ceased to exist.

This Association does not find the motive for its existence in the dreary level of mediocrity, as de Tocqueville intimated and Amiel concluded, but in an earnest and successful effort to create a medical aristocracy, in membership, scientific work and social relations; an Association of scientific gentlemen for the uplifting of a gentlemanly science.

As an elective member of the Council of this Association for the past ten years, I understand the assiduous attention and distinguished ability which my predecessors have given to and shown in this office. As I am about to assume this office I appreciate, as never before, the brilliant results which they have achieved. And while I am deeply sensible of honor conferred upon me, I cannot but realize that I am the legatee of a remarkable past and the trustee of a promising future. I know that the loyal and intelligent co-operation of the Council has always been extended to its presiding officer, and that the members of this Association have always given it most earnest support. Relying upon the history of the past as rendering an assured future, in all humility, I pledge you that, to the best of my ability, I will maintain the high standards of this organization, working faithfully and conscientiously with the Council and for each member of this Association.

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THE ELOQUENCE OF INFANCY.¹

BY

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In the standard dictionary, one of the definitions of "eloquence" is the quality of being eloquent or of moving the mind. We are then concerned with a definition which embodies two propositions; the quality of using eloquent speech and the quality of

moving the mind. Mere eloquence of speech requires nothing but a thinking and feeling personality alive to some definite proposition and with the ability to thrust the thought eloquently forward into the spoken word.

And much of that which is spoken is lifted from the grade of the commonplace and elevated to the realm of eloquence by the tone of the voice, the pauses, the gestures, the expression; in short, by the personality back of the spoken word. However, the quality of moving the mind does not depend upon the spoken word although articulate speech may be an important factor in the process. The sometime quoted "eloquence of silence" is more than mere poetic license, it is the recognition of a most powerful factor in eloquence and may become the direct stimulus which "moves the mind."

This power of moving the mind depends not alone upon the effort put forth to accomplish that object but is influenced to a very large extent by the receptivity of the mind that is to be moved. No degree of eloquence can successfully move the mind that through ignorance, disinterest or antagonism sets itself above such influence and even in those instances in which there is an attempt at co-operation, there must also be an adaptability of the mind receptive to impressions through the influences of a knowledge sufficient to appreciate and understand the full import of what is expressed.

Then if we are to secure the full benefits of the quality that moves the mind, there must be application of the laws of adaptation, co-operation and definiteness. This entails upon the physician who would properly understand and correctly interpret the inarticulate expressions of disease in

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the infant, an intimate knowledge of how and why such expression differs from that of adult life.

The diagnosis of disease in infancy offers difficulties and peculiarities which are not patent in the adult. The idea that the infant is an adult in miniature is a false one; the infant bears to the adult a relation of potentiality; nothing more. A complete description of all the changes in the economy which mark the infant from the adult would include each element of mental and physical growth. But even a general knowledge of these differences shows to one the error of attempting to apply exactly the same methods of diagnosis as are suited to adult life.

The clinical manifestations of disease in infancy and in maturity are vastly different; it is this difference that makes the appreciation of disease in the infant difficult. The familiar things which are used as the foundation for building up the superstructure of diagnosis in the adult are in infants entirely absent, or are so totally different that they are misleading. In approaching the infant the inexperienced are at once confronted with a sense of loneliness similar to that which overcomes the stranger in a strange land; a land in which there are few familiar scenes and none to guide.

It would be impossible in the time allotted to me to consider in detail all of the phases of this subject but the purpose of this paper will be conserved if I am able to attract practical attention to the fact that "Babies talk, but few understand the language."

While there are many of the diseases which are peculiar to the period of life known as infancy, it is the peculiarity of the patient as much as the disease which

must interest us, for it is this that leads to the varied expression of disease. Of prime importance in the study of any disease is the accuracy with which a diagnosis may be made. In infancy this entails that we must be acquainted with facts about the infant which have no direct bearing upon the disease present, but which must often modify or entirely change our usual interpretation of symptoms. For instance, we are always conscious of the insignificant influence of the mind upon disease in infancy for the diagnostic possibility is appreciably limited by the fact that psychic neurotic influences are almost excluded.

The various tissues may also be incapable of exhibiting phenomena which are the result of certain etiological factors, or in their immaturity they may respond more easily and certainly to other factors. And again, even in the presence of a definite symptomatology, the reasoning and deduction as to its cause must be entirely distinct from the same processes as they apply in adult life. For instance, the very young infant is comparatively free from convulsive seizures, because during the first three months of life, the acute systemic bacterial toxæmias, which are potent factors in the etiology of convulsions, are infrequent. Then again, stimulation of the cortical motor centres and of the convulsive centres at the base of the brain does not excite convulsive movement easily, because the nerve force discharged from these centres is hindered in its dissemination by the underdevelopment of the myelin sheaths of the fibres of the pyramidal tracts. These sheaths are gradually developed so that about the third or fourth month of life the pyramidal tracts have their functions sufficiently developed to bring the spinal cells and the cerebral convulsive centres into close touch.

But after the third month and until the end of the second year all of the nerve centres are most irritable, so that convulsive seizures are common. The clinical import of this is, that convulsions in the very young infant are of serious import and that not infrequently after their subsidence there is some weakness of the affected musculature. That convulsions occurring at the onset of some disease in an infant between the ages of three months and two years, are of but little import and may be due to the most trivial cause, while in adult life any such event at any time would be sufficient cause for great alarm.

The necessity of recognizing these differences must be apparent, because it is by a correct analysis of them that we are enabled to determine the import of symptoms. Not infrequently apparently mild symptoms are interpreted as indicative of mild disease, while seemingly more grave ones arouse unnecessary alarm and foster the drawing of wrong conclusions.

Take, for example, the symptomatology of an acute illness in the infant; we find that there is not the limitation of symptoms referable to the particular organ or region which is primarily involved as in adult life, but the infant becomes the subject of more general or constitutional symptoms. Thus the expression of the disease is more constitutional than focal and the younger the child the more striking the contrast.

This is largely due to the fact that there is an inability in infancy to focalization of nervous function because immaturity leads to an interference with the complete mechanism of inhibitory control.

Then again, the reflexes are not restrained but become generalized leading to the appreciation of constitutional symp-

toms. And so we observe that nervous phenomena which would be of grave import in later life, loses much of its gravity because it occurs in the immature.

For instance, the onset of most of the acute diseases of infancy gives rise to one or more convulsions, an event which is practically unheard of in adult life. Such convulsions are almost always mild in their effect upon the infant and cause little or no alarm to the one who is experienced enough to determine their significance.

And again, the digestive system bears considerable of the brunt of the invasion of any disease in infancy, so that it is our common experience to observe the symptoms of vomiting, diarrhoea or constipation at the onset of most of the diseases of infancy. Even making allowance for the ease with which disease of the digestive apparatus is produced in infants, the fact remains that a considerable proportion of disturbance which is laid to digestive disease is due only to the onset of some acute infection.

The inarticulate expression of disease in infants has several qualities which adults do not possess. And first among these is absolute honesty of such expressions.

An infant's philosophy is contained in this statement: "All that is painful is evil; all that is pleasurable is good."

To the infant the mere act of living in contentment is sufficient and this sufficiency takes no recognition whatever of the future but is limited to the comfort of the moment. Neither is there any living in the past, and this is aptly illustrated by the experiences of an infant in the pain of an intestinal colic. With the quick subsidence of the pain there is an immediate return to the usual playfulness and no recollection of the past.

Health and Disease are terms that have for the infant no content.

This fact of living for the moment is one of the chief factors in the discomfort attendant upon enforced restraint. The infant dislikes illness and by nature their rebellion against the restraint which an illness enforces is absolutely honest.

This should lead one to appreciate the fact that if an infant shows any tendency to lose interest, to lag in its play, to become fretful or act as if in discomfort, the cause should be sought in the bodily health.

Therefore, muscular activity which is an important factor in the growth and development of infants is responsible for some of the peculiarities which are noted in illness.

In fact, the disinclination to continue the usual muscular activity should be interpreted as an early sign of ill health and this is often expressed by the infant in the desire to be left undisturbed.

The common accompaniment of diminished muscular activity is a diminution of mental activity and the infant loses interest in its surroundings because the exertion demanded by the attentive attitude is unpleasant.

And so when illness has marked one of these little ones as its victim, this same antagonism to illness, this rebellion against the consequent restraint keeps the infant from the magnification or multiplication of its symptoms.

Further than this the infant is entirely uninfluenced by the habit of morbid introspection and is therefore incapable of exaggerating its ills for the sake of attracting attention to itself. Whatever exaggeration takes place is due to the parent who gives the history and through innocence or design distorts the facts, or to the physician who allows the given history to influence his judgment more effectively than what he finds by observation and examination.

I have more than once heard it stated that even infants would exaggerate their ailments and that the quality of introspection in them was not entirely wanting. But this has always been based upon the demands which some infants make upon their attendants during an illness. Much of this is the result of habit which has been formed during periods of health and is not a part of the illness.

There is no doubt but that infants need and demand more sympathy than any other class of patients but the demand for it never exceeds the need. The infant crying in his apprehension may be labeled by the inexperienced as a disturber of the peace, but not so to the mother who understands the meaning of the cry and who is moved by its eloquence. To the infant, her arms are as a narcotic and when the mental need is fully supplied there is no further demand. Therefore the mental attitude of the infant may be taken as a safe guide and index to his bodily state.

From these general facts which are not always appreciated and may even be unknown, we can readily see that the more definite expression of disease in infancy is misinterpreted or unrecognized. There are, of course, innumerable objective symptoms which will give the examiner a wealth of information about the condition of the infant, but many of these are not under the control of the infant and, therefore, do not come within the province of this paper. But on the other hand, there are many things which are directly subject to the volition of the infant and a brief resumé of these may prove suggestive.

And first, the posture which the infant assumes may be significant. The attitude of the infant on the one hand, may be reassuring, as we note that he rests easily and turns

to greet the physician. It assures one that the ailment is slight, or that convalescence is established. On the other hand, the refusal to be attracted indicates that the illness is of a severer type. Thus in an infant with a suspected meningeal condition, if he turns promptly to locate a noise or upon the approach of a stranger, he is improbably the subject of meningitis.

The side position is characteristically assumed in two diseases—acute pleurisy and pneumonia. In both instances, the infant lies upon the affected side, so as to limit as much as possible the motion of the diseased side, and to allow free expansion of the unaffected. In pneumonia it is not difficult to get the infant to temporarily change this posture but in pleurisy there is decided objection to such a procedure, which in most instances amounts to absolute refusal.

If this side position has been persistently assumed and as the illness advances, the infant gradually but persistently changes to the dorsal posture, it indicates that effusion is taking place.

The dorsal position (a) with slightly bent legs, is the position of election in cases of acute peritonitis and tubercular peritonitis. Motion is carefully avoided, and in acute peritonitis there is generally evidence of fear as the infant is approached.

(b) With a curve of the trunk slightly toward the right side, and with the right knee more or less flexed, or in some instances held up by the infant, which gives relief to some extent, the dorsal position is often assumed in appendicitis.

On the abdomen is the position taken in (a) some cases of Pott's disease, but it is by no means characteristic; (b) in phlegmons of the back (to relieve the pressure); (c) and to eliminate the pain which is con-

sequent upon much light in severe photophobia.

Under forced positions it is only necessary to make mention of opisthotonos and emprosthotonos, which occur in some cases of tetany, strychnine poisoning, and meningitis.

The upright or sitting position may be assumed as the result of abdominal accumulations of fluid; from large effusions in the pleural cavity; and it attends some cases of laryngeal diphtheria.

Also the face of the average infant expresses more clearly than does the adult the feelings and character of the individual. Except as the child more closely approximates the adult type, there is no attempt at deception by the facial expression. Sick or well, there is a candid frankness which allows of no exaggeration or dishonesty.

The value of facial expression as indicating diseased conditions will exist only as one appreciates what is normal; then, with the capability of comparison which comes by many observations, one can interpret the expression of the infant.

The normal expression of an infant while asleep is one of perfect unbroken calm and peace. The eyelids are closed, the lips very slightly parted, and the nostrils immobile.

Normal expression plus twitching of the facial muscles is indicative of irritation of some portion of the nervous system. It may be the forerunner which indicates an impending attack of general convulsions; but if so, there is very apt to be restlessness also.

Normal expression with eyelids parted may be observed in many of the milder disorders of the nervous system and during digestive disturbances. If the muscles of the face are drawn from time to time, it

strongly indicates that the disorder is a digestive one.

Listlessness (that is, marked by a relaxed attention) may be due to several causes: (a) After some days' illness with typhoid fever a listless expression is an almost constant feature. (b) If associated with motionless or seldom moving eyelids, or with wide-open eyes staring steadily into the distance, it is quite indicative of meningitis, and *this* condition of the eyes and the expression may help in some cases to differentiate it from typhoid. (c) With sunken eyes, and occurring at any time during any disease, it is a symptom of ill import, for it is then a sign of suddenly increasing prostration or impending death.

Vacant expression (a) associated with enlarged head, but the bones of the face remaining small, and the eyeballs perhaps slightly protruding, is seen in hydrocephalus; (b) with thickened lips, more or less gaping mouth, small nasal orifices, and a broadened root of the nose, is quite common in hypertrophied tonsils and adenoids which are almost invariably associated with them.

When the expression is idiotic and the lips thickened, the tongue protruding so that saliva is almost constantly dribbling from the mouth, the nose flattened and the skin of a pallid, waxy hue, cretinism is probably the cause. (b) If the same picture is presented, but in a very much lessened degree, we may be dealing with an exaggerated form of mental deficiency.

Anxious expression (a) with nostrils more or less dilated and labored breathing, is indicative of some disturbance to the circulation, and especially so if any cyanosis is detectable. (b) This expression is present, with sunken eyes, depressed fontanelles, a general sharpening of all of the

features, with the angles of the mouth drawn and considerable pallor of the face noticeable, in cholera infantum. (c) If the upper lip is retracted, exposing the teeth, and along with this there is visible prostration, it is indicative of acute peritonitis. (d) Associated with shallow respirations and increased frequency of breathing, and the cramped position on the side, it is presumptive evidence of acute pleurisy.

An old expression (a) with a pale, pinched and weazened face, and associated with "snuffles" in an infant, is indicative of hereditary syphilis. These infants look prematurely old and may also show a depression at the bridge of the nose and a prominent forehead. Such an expression is most apt to be noticed during the first two months of life. (b) When the skin has a leaden hue and is loose and wrinkled, one would naturally suspect marasmus. (c) An old expression is common to infants of all ages, who are suffering or who have recently suffered from chronic starvation, and such an expression is quite in proportion to the chronicity of the condition.

In edema and erysipelas all the lines of expression may be lost.

Painful disfiguration of the face while pressure is being made over some distant portion of the body aids in definitely locating the site of tenderness, and sometimes of pain, for pain may be referred.

Crying is not expressive of the emotions until near the end of the third month of life, and about this time tears are observed to accompany the cry. It is a matter of interest to observe that the tears, perspiration, and a free flow of saliva all appear about the same time of life.

A lusty cry directly after birth is a most welcome sound, not alone as a sign that the most difficult stage of labor is termi-

nated, but it indicates the undoubted respiratory vigor of the infant.

Weak, feeble at birth, or absence of any crying at this time, is at once indicative of—(a) the general feebleness of the infant, (b) pulmonary atelectasis, (c) congenital heart lesions. The first is self-evident, the second being indicated by lividity and infrequent or absent respirations, and the last by the general pallidity and weak fluttering heart.

Loud cry, occurring several times during the day or night, arising suddenly and stopping just as suddenly especially after the expulsion of gas from the stomach or bowel, is strongly indicative of colic from indigestion. During the act of crying the infant is very apt to throw its legs about or to rub them violently together, but this is not any more characteristic of this cry than it is of any violent crying spell. If due to colic, it is at once relieved by an enema, and the evacuations may give evidence of feeble digestion. If the same character of a cry is present with a rise of temperature to 101° F. or over, it is proof that we are not dealing with a simple dyspeptic colic, but that there is some associated condition.

Continued loud cry, with a stiffening of the body and the head thrown backward, may be due to one of two things—temper or acute pain. The first is very rarely seen before the fourth month of life, and is apt to occur under similar circumstances. To properly diagnose the latter cause, it is necessary to examine the infant and its surroundings for the cause of the distress. Loosened pins and the bites of insects are a prolific cause. If the pain is relieved by the ingestion of food, but after a time returns again, it is evidence of some digestive condition causing the pain.

Continued, suppressed cry should attract attention to conditions in the head, the abdomen, or the chest. If pain is caused by the use of the abdominal muscles or those of the chest, the infant will try to suppress all motion. If venous stasis increases pain in the head, the infant will refuse to move that member freely, and tries to suppress the cry.

Continued but low cry may indicate several conditions:

(a) With loss of weight, but no appreciable rise in the temperature, the voiding of a much lessened amount of urine, and, as a rule, with constipation, it indicates that the infant is hungry. This may be corroborated by an examination of the milk, or testing what effect upon the condition a feeding or two with a modified milk will have. When the cry has been due to a chronic state of hunger, one such feeding will make the child restful. Sometimes the infant may vigorously suck the fingers, but this is not a constant feature.

(b) When more forcible an hour or two after nursing and associated with occasional attacks of colic, it indicates that the cause is chronic intestinal indigestion.

(c) With progressive prostration (which is more marked in young infants) and with a tone to the cry which is a sort of thin, crowing, quacky sound, it points to the existence of retro-pharyngeal lymphadenitis.

(d) With progressive emaciation and the cry being quite hoarse in character it would suggest hereditary syphilis, if there was a persistent rhinitis of a more or less severe type and an old look on the face of the infant.

(e) After the subsidence of the acute symptoms of several diseases, as cholera infantum and chronic ileocolitis, there may

be a low continued cry which is almost a moan; but this cry occurs too late to be of any special value.

Short violent cry may be due to several factors:

(a) Increased upon pulling at the ear or by movements which affect the head suggests the probability of inflammation of the ear. In the presence of an acute inflammation of the ear the mere act of sucking will cause pain and this type of crying. There is usually some elevation of temperature.

(b) With a shrill character and following or associated with the act of coughing or sneezing, it points to acute pleurisy.

(c) When very piercing in character, very sudden in its onset, and almost simultaneous with the act of vomiting and associated with marked prostration quickly following, it should lead to an examination for intussusception.

(d) While in a somnolent condition it is evidence of hydrocephalus or hydrocephaloid.

(e) Occurring during defecation (due to actual pain) or just previous to the act (dread of pain), and associated with persistent constipation, it is almost certainly due to fissure of the anus. The same thing happening during the act of urination indicates that there is a spasm of the bladder, the passing of some fine calculi, or it is occasioned by phimosis. The administration of appropriate treatment quickly clears up the first, the examination of the diaper shows evidence of the second, and examination of the penis clears up doubt as to the latter.

Crying which occurs only when food is offered would indicate that the child was unable to nurse (and this might be due to causes in the nose or mouth or to faults

in the apparatus used in nursing) or that nursing caused pain. The cry of acute gastro-enteric infection is of a restless type, with intervals during which the infant sleeps quietly, but these last only a few minutes. In pneumonia the cry is apt to be short and catchy. In meningitis we may encounter a sharp, piercing, nocturnal cry, but this is true also of chronic bone disease. In marasmus there is a continual whine; the child is seldom at ease.

If the infant cries when it is handled and at other times seems to be comfortable, it is indicative of infantile scurvy.

Any vigorous crying, no matter what its type, would immediately exclude such diseases as atelectasis, advanced peritonitis, pleuro-pneumonia, or croup.

And so if I had time, I might go on and mention many things which are great aids to the examiner who is alive to the eloquence of the infant.

And when we come to consider those indicators of the pathological condition; indicators which are *not* subject to the infant's will or choice, their name is legion.

Even though the eloquence of the infant moves the mind to a clearer appreciation of the disease present or impending, and observation seems to indicate that a certain pathological process is present, the attitude of the physician should be two-fold. First, for the infant's welfare, the deductions drawn from observation must be confirmed by the most careful examination. And, second, having drawn a conclusion, the physician for his own good, should question himself as to why he arrived at such conclusions. This double examination must surely act as a stimulant to personal endeavor and the finer appreciation of disease in the infant.

As physicians living in an age when scientific achievement and activity seem to

be at their height and when the whole medical world is alive with the stimulating expectancy of impending discovery, we are prone to be negligent of the smaller things.

And yet this may be said to be one of the great dangers of a medical career; the trusting in special occasions. We are apt to think that conspicuous occasions, unusual experiences with disease and the wrestling with big problems have most to do with the advancement of our profession. In this we are wrong. The commonplace day, the doing of the ordinary things, the regard for everyday experience; these are the things which try out and prove the man. The real test comes during the commonplace experience with disease and it is this experience that fits one for the mountain-top attainment.

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SOME POINTS OF IMPORTANCE IN THE PERFORMANCE OF VA- GINAL FIXATION.

BY

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Vaginal fixation of the uterus attaches the fundus uteri to the anterior vaginal wall and places the bladder on the posterior wall of the uterus.

In order to perform this operation to the greatest advantage to the patient, it is necessary that the fundus should be well up behind the symphysis and that the cervix should be thrown high up and as far back as possible toward the hollow of the sacrum. The cervix takes this position when vaginal fixation is done to correct retroversions or

retroflexions which are not complicated by elongatio colli, by cystocele, by descent of the uterus or by descent of the vaginal walls. Then the simple operation of vaginal fixation usually suffices except in those cases where the anterior vaginal wall is congenitally a short one, in which cases vaginal fixation is contra-indicated.

If in the above mentioned class of cases of retroversions or retroflexions complicated by elongatio colli, by cystocele, by descent of the uterus, etc., the simple operation of vaginal fixation is done the operation fails of its best results as can be seen from Figures 1 and 2.

Figure 1 shows the fixation sutures which are to unite the anterior wall of the uterus to the anterior vaginal wall in the simple operation of vaginal fixation.

Fig. 2 shows the sutures tied and the longitudinal and transverse incisions in the act of being closed by running catgut suture.

Figure 2 shows, in an exaggerated form, the lack of tautness in the anterior vaginal wall in the case of simple vaginal fixation done for cystocele with descent. The important point to be noted however, is the faulty position of the cervix. (The cervix is shown for purposes of demonstration further out beyond the vulva than is actually the case). This demonstrates that the lack of tautness in the anterior vaginal wall is not alone responsible for the position which the cervix has assumed. The trouble is that the uterus is too long, hence the simple operation does not throw the cervix high up and far back when, as is depicted in this drawing, we are dealing with an enlarged or elongated uterus, a uterus which has descended. It is necessary to overcome this obstacle when dealing with ptoses of the uterus, when the uterus is enlarged and

elongated; when there is an elongatio colli, or when there is a cystocele with descent of the uterus, and most certainly is it nec-

To overcome this obstacle it is necessary, (1), to perform a high amputation of the cervix at the level of the internal os. (2),

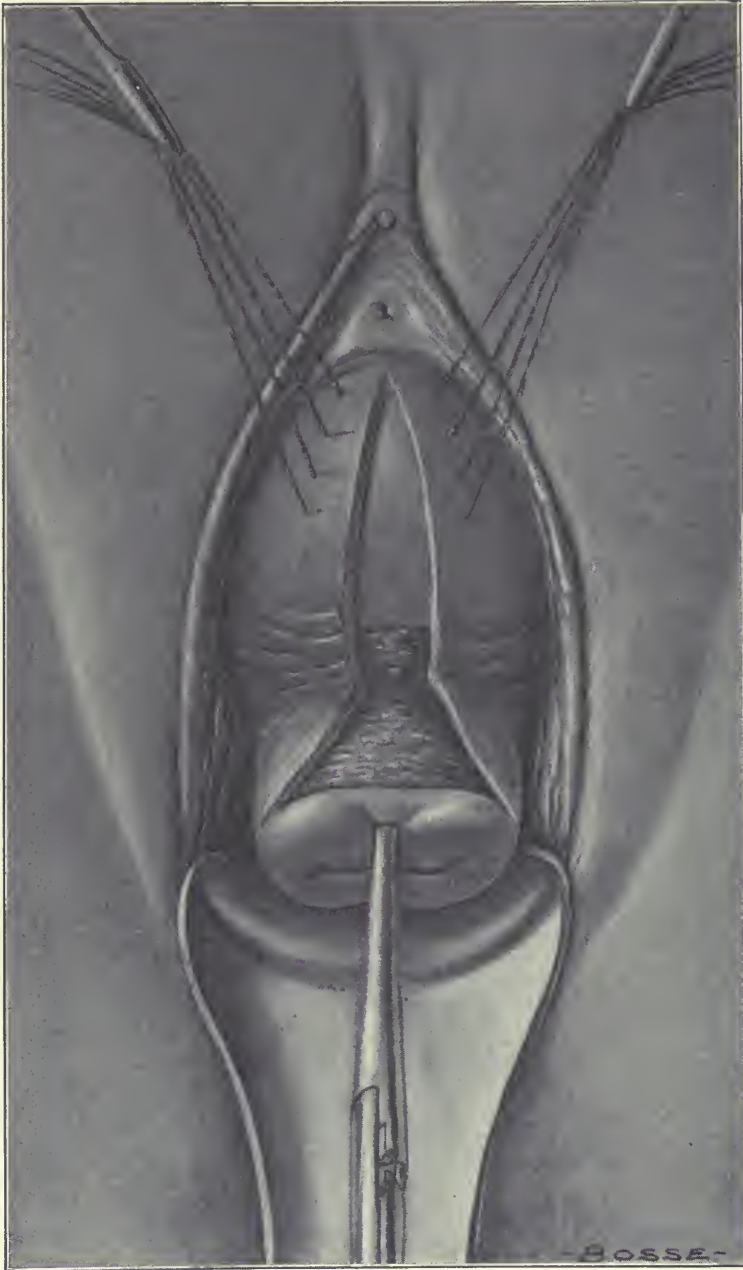


FIG. 1.

essary in the major degrees of ptosis and in the case of total prolapse of the uterus.

it is necessary to make a taut anterior vaginal wall to which the fundus is to be fixed.

(a) This may be done without resection of any part of the flaps. (b) It is generally advisable to resect a triangular area from each

This tautness is produced by either one of two methods of attaching the vaginal mucosa to the new cervix opening after

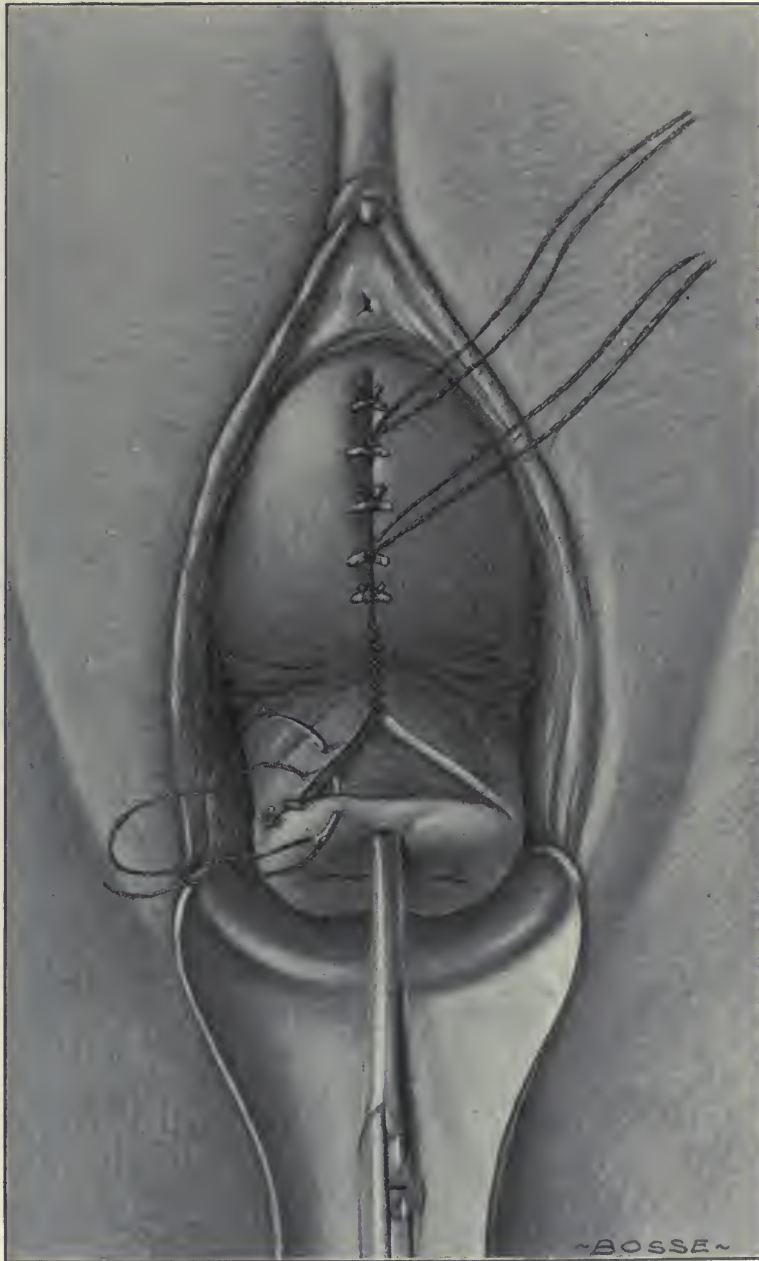


FIG. 2.

of the two flaps produced in the anterior vaginal wall after separation of the bladder.

an amputation of the cervix has been done.

The accompanying illustrations show the two methods of accomplishing these steps.

In any case of simple vaginal fixation the fixation sutures are passed through the anterior vaginal flaps; and the drawings Nos. 10-12 show the same operation

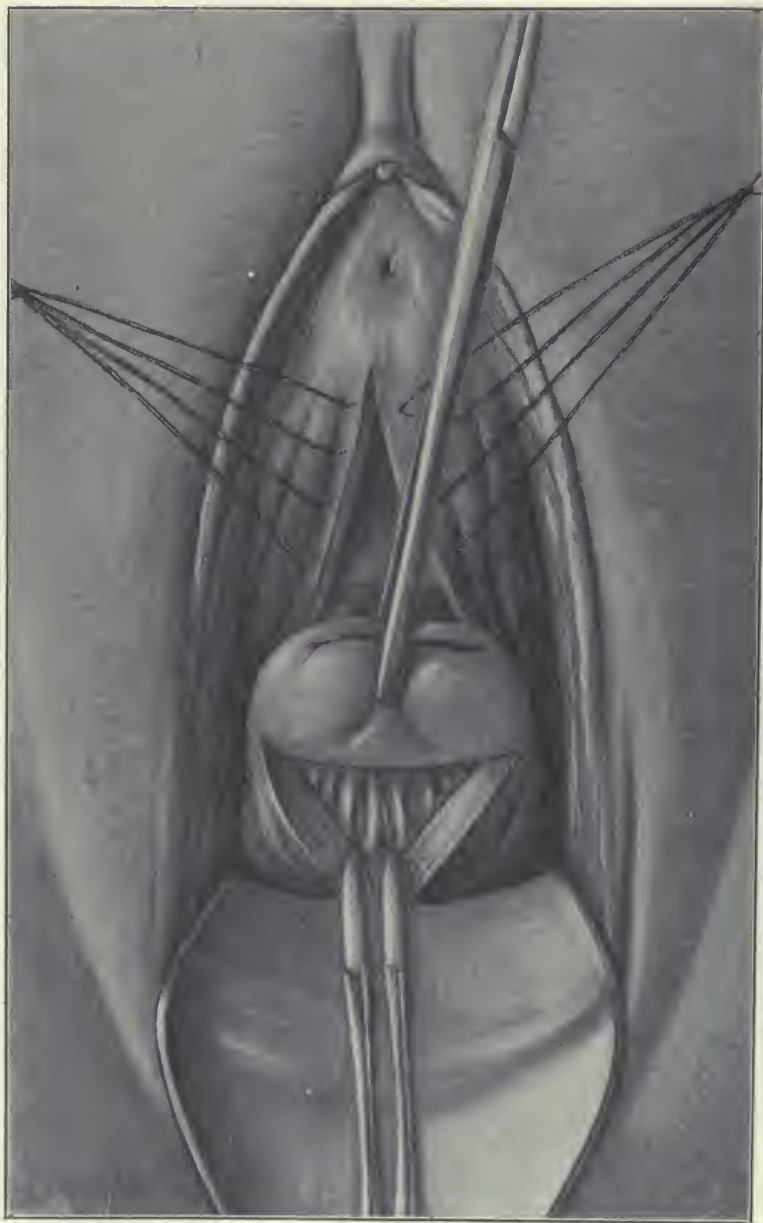


FIG. 3.

the anterior wall of the uterus. The following drawings Nos. 3 to 9 inclusive, show the amputation of the completed by resection of a large portion of the anterior vaginal flaps. After the uterus has been replaced with-

in the peritoneal cavity, and after four fixation sutures have been passed through the

ceps is pulled down toward the vulva. A transverse incision is made through the



FIG. 4.

vaginal flaps and through the uterine wall, the cervix grasped with a volsellum for-

posterior wall of the cervix and the lower lip of the incision is grasped with two long

artery forceps as shown in Figure 3. The finger covered with gauze dissects the lower lip of the incision away from the posterior wall of the cervix up to and beyond the peritoneal fold of Douglas. Fig. 4. The cervix is then pulled out and to one side; a

cision on the posterior cervix wall, and the index finger or the thumb, covered with gauze, pushes up this vaginal mucosa and separates it from the cervix up to the situation of the uterine arteries, as is shown in Figure 5.



FIG. 5.

snip with a pair of scissors cuts through the vaginal mucosa on the lateral wall of the cervix which still remains as a bridge separating the transverse incision on the anterior cervix wall from the transverse in-

Figure 6 shows the amputation of the cervix carried on at the level of the internal os. The cervical canal is then dilated, after the anterior lip has been grasped by a volsellum forceps, and the vaginal mucosa is

then united about the internal os. Chromic catgut sutures Nos. 3 or 4 are passed through the cervical canal through the entire wall of the cervix and out through the vaginal mucosa. The first

longitudinal incision almost into apposition when tied as shown in Figure 9.

The remaining area of the lateral walls of the cervix may then be closed or covered in either of two ways; either by passing

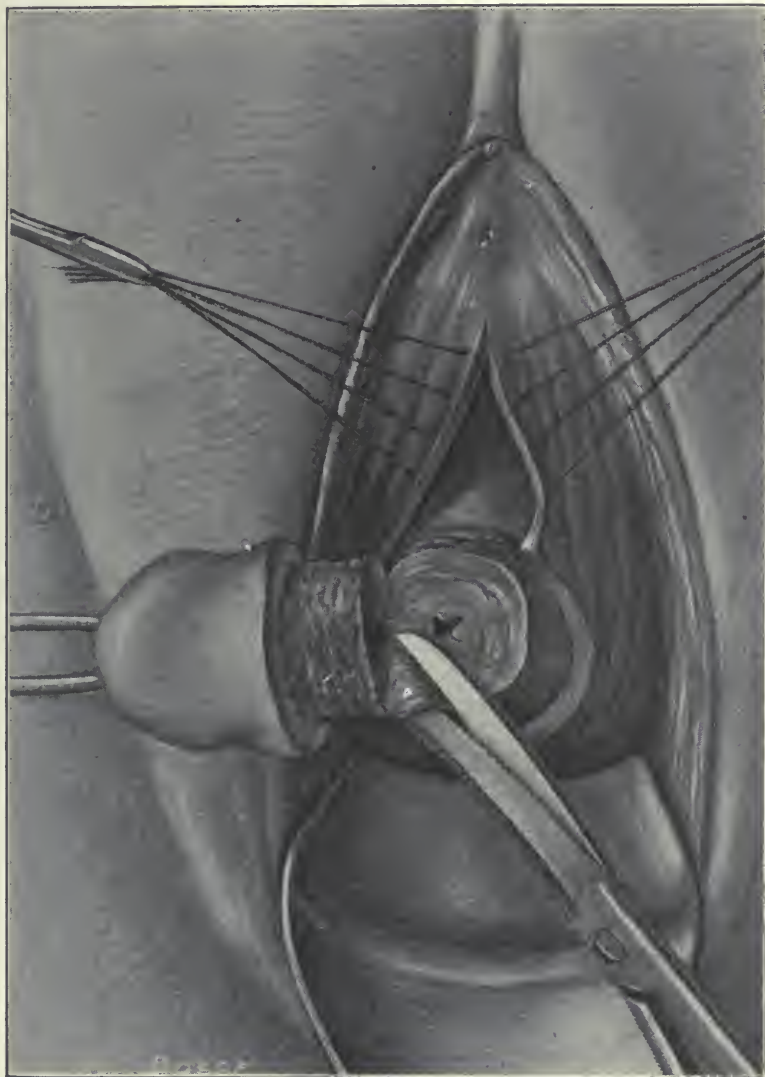


FIG. 6.

three are passed as shown in Figure 7 and are then tied. The succeeding sutures are passed, two on either side, as shown in Figure 8. These are passed in such a manner that they bring the two edges of the

sutures as shown on the left hand side of Fig. 9 through the cervix and out through the lateral vaginal musoca or as shown on the right hand side of the drawing, through the vaginal mucosa, then out through the

cervical canal, then back through the cervical canal and out through the vaginal mucosa, the next suture to that being passed

vaginal mucosa after which the four utero-vaginal fixation sutures are tied.

If this operation is performed in the case

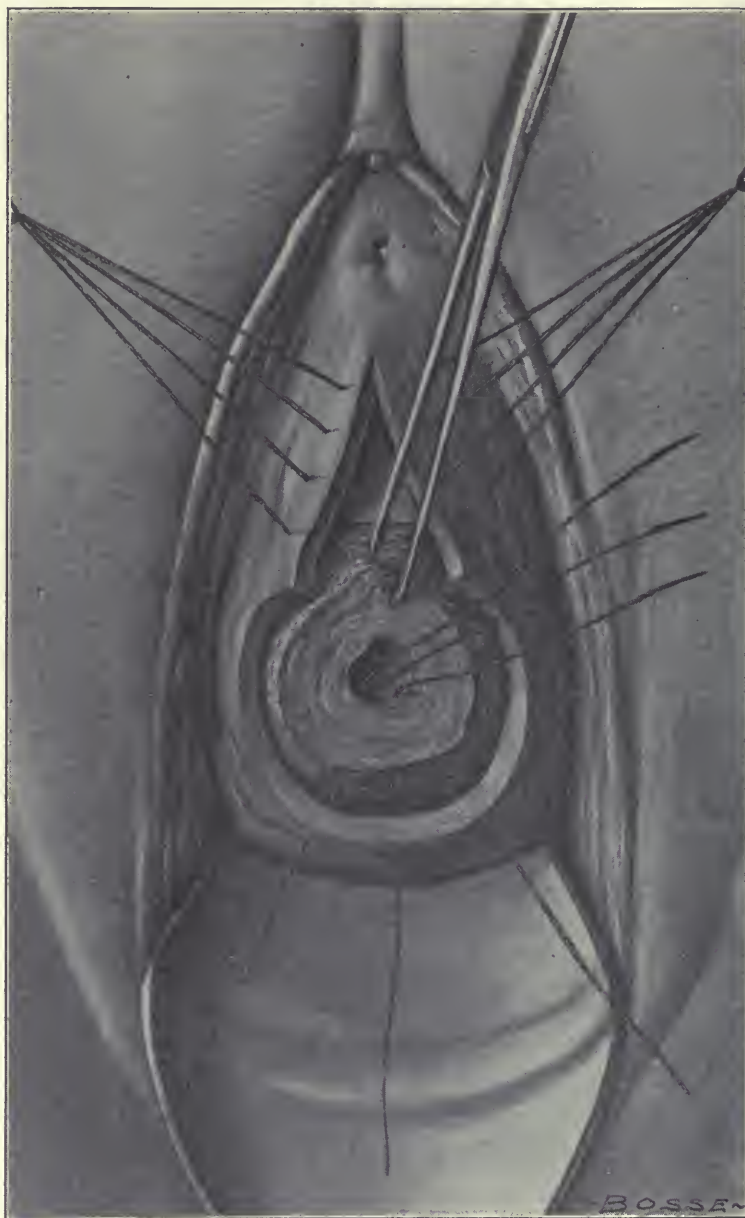


FIG. 7.

either in the same way or simply straight up and down through the vaginal mucosa. In this way the entire cervix is covered by

of cystocele or descent of the uterus with lax anterior vaginal wall, a condition shown in Fig. 9, the disadvantage resulting from

the failure to resect parts of the anterior vaginal flaps is evident. The method which passed through the vaginal flaps as was done in Figure 3 but are simply allowed to

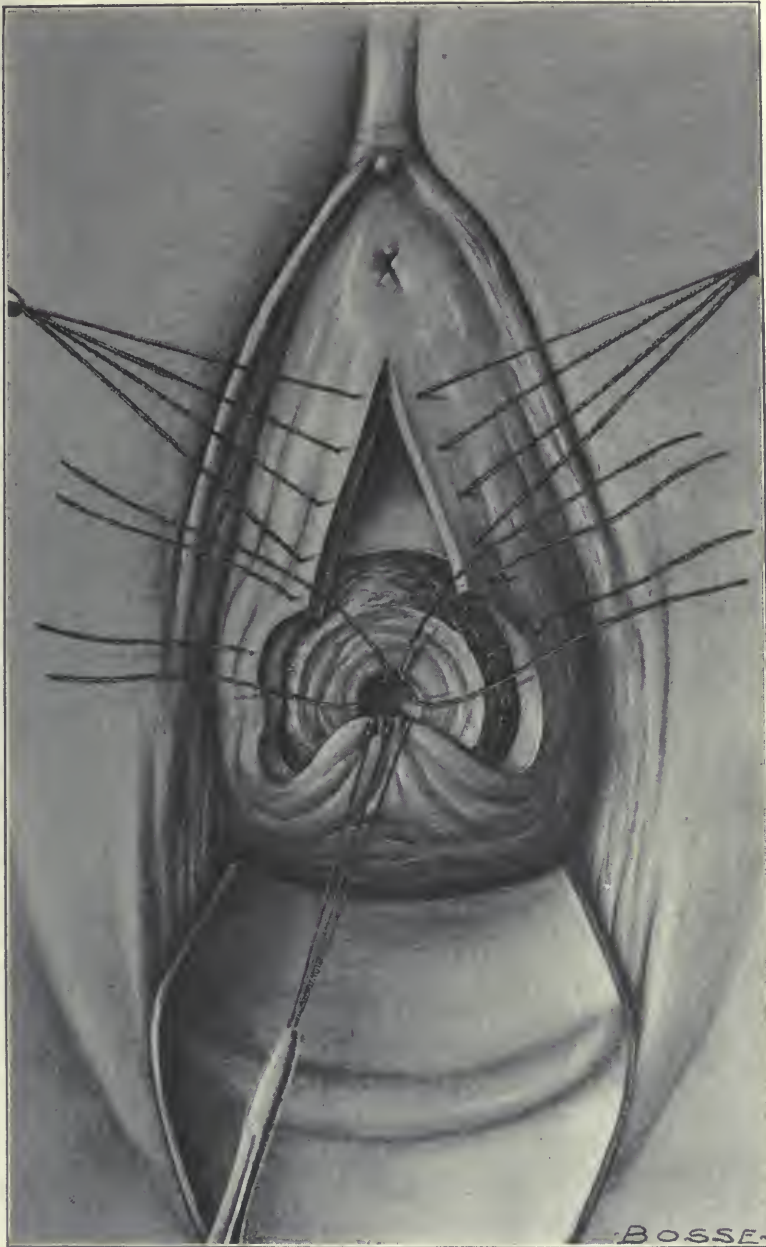


FIG. 8.

best overcomes this disadvantage is the following: pass out through the vagina and are to be held by artery forceps for subsequent use.

Fixation sutures are passed through the anterior wall of the uterus but are not The attaching of the vaginal mucosa to the cervix is begun as in Fig. 7 by three sutures

which are tied, but the subsequent sutures take up the lateral borders of the vaginal mucosa closely, allowing of no such reefs or

mucosa in the fornix is left as two redundant flaps shown in Fig. 10. These flaps are then resected as shown in Fig. 11, after

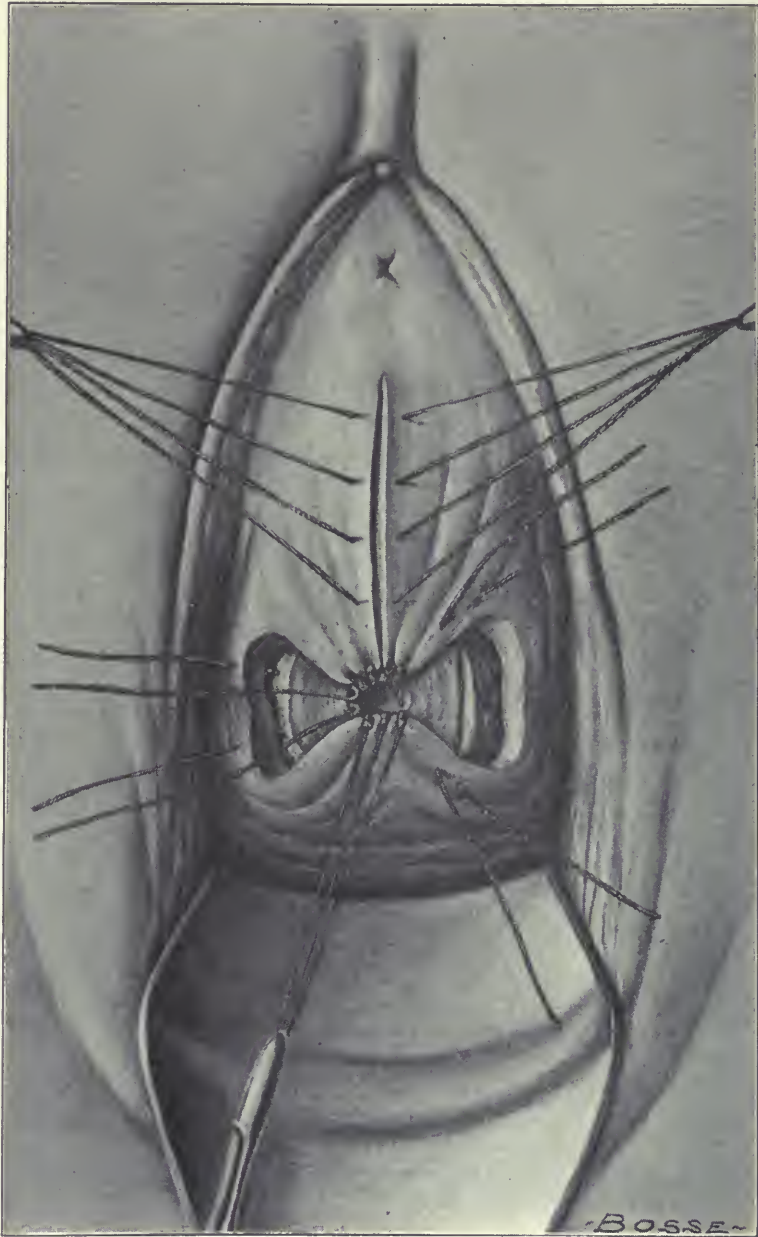


FIG. 9.

pleats as are evident in Fig. 9. As a result of this procedure all the surplus vaginal

which the four fixation sutures which have already been passed through the anterior

wall of the uterus are then threaded in a needle in turn and passed through the edges of the anterior vaginal flaps as shown in Fig. 12. As a result of these two im-

portant steps the anterior uterine wall is attached in a manner which lifts the uterus up and holds it in a more elevated horizontal position, and the hypertrophied, often elongated cervix has been amputated. These procedures allow the lower end of the uterus to be thrown high up and



FIG. 10.

portant steps the anterior uterine wall is attached in a manner which lifts the uterus up and holds it in a more elevated hori-

far back. This method of attaching the vaginal mucosa around the internal os takes away much of the enlarged calibre of the

upper vagina, a condition so often present with descent of the uterus and due to the

dition in the upper vagina can be readily appreciated, however, only when the subject

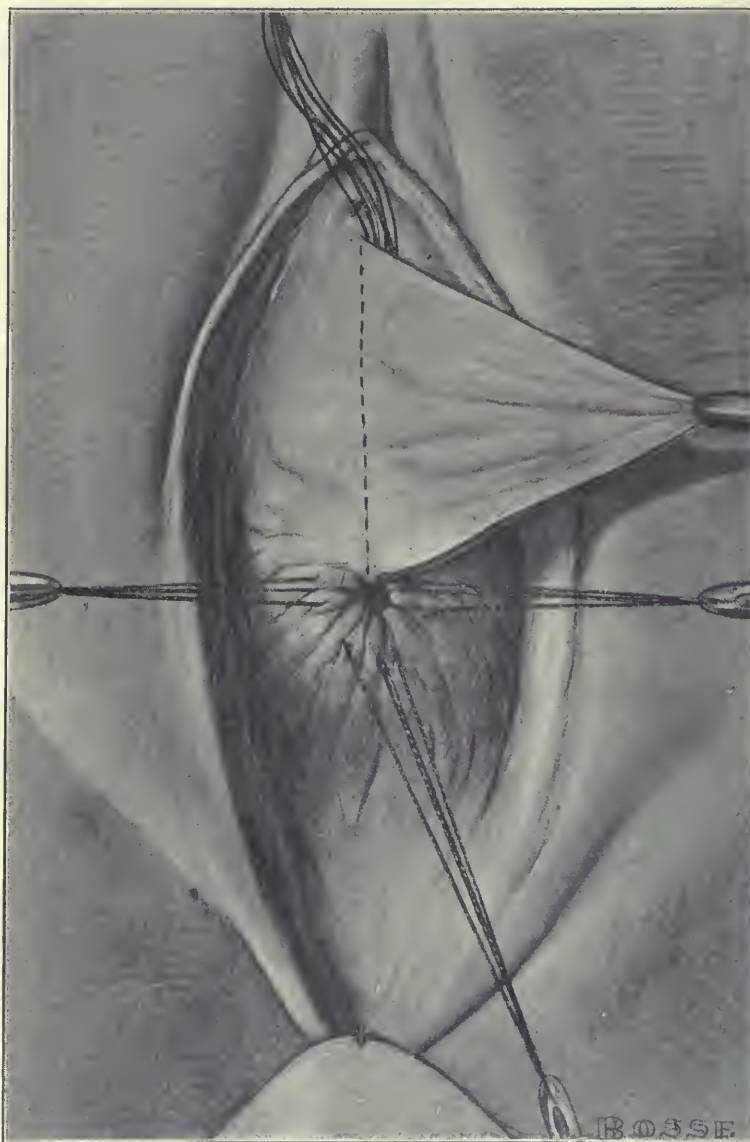


FIG. 11.

existence of a posterior enterocele. The advantage gained by the removal of this con-

of total prolapse of the uterus is considered.

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FIG. 12.

ACUTE INFECTIVE OSTEOMYELITIS.¹

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The phrase, acute infective osteomyelitis, as commonly accepted, defines a class of bone lesions on clinical, etiologic and pathologic grounds.

In clinical pathology, the term, osteomyelitis, is used in a collective sense to designate inflammation of all the different tissues of the bone, including the periosteum and the epiphyseal cartilage.

Etiologically, acute osteomyelitis, being an inflammatory process, may be mechanical as by fracture, infective as by growth of certain pathogenic organisms, or physio-chemic (physiologic?) as is presumed by some in arthritis deformans, osteomyelogenous neoplasms, etc.

The primary cause of acute infective osteomyelitis is the successful inoculation of the bone tissues by any of the pyogenic organisms;—usually in the metastatic cases by the staphylococcus pyogenes aureus alone or associated with the staphylococcus albus, or the streptococcus pyogenes. More rarely the staphylococcus albus and the streptococcus pyogenes are found alone. Bacillus coli communis, bacillus pyocyaneus, bacillus typhosus, bacillus influenzae, pneumococcus lanceolatus, and others are occasional agents of the affection. Saphrophytic bacteria may be present. Bacillus tuberculosis is also an agent when acute miliary tuberculosis affects the bone, but it is of no surgical importance.

The infecting organism may be implanted in the bone by:

(1) Direct implantation—Compound fractures, amputation wounds, bullet wounds, etc.

(2) Extension from contiguous tissues—Osteitis secondary to suppurative arthritis, etc.

(3) Metastasis—(a) As an accident in the history of a remote focus of infection, the movable tissues (blood and lymph) acting passively as vehicles; (b) As an incident in a blood mycosis.

The cases that afford the greatest difficulty in diagnosis are those of metastatic, i. e.,—haematogenic,—origin. As such, the blood may or may not be the seat of an infectious process. In the one case, bacteria, infected emboli, or bacterial emboli may be swept into the blood stream adventitiously and be transported as passive foreign bodies from the depot of invasion to the depot of redeposit without multiplying or reacting measurably on the body in the interim. This may be true in the formation of metastatic abscesses if septic organisms cannot be recovered from the blood and if the related constitutional symptoms are periodically absent or accountable on the basis of toxæmia. Such an invasion of the blood amounts to an unsuccessful inoculation of it. In the other case, the blood may have been successfully inoculated at the depot of invasion and be the seat of a resident infectious process, a blood mycosis. In such a condition, the infecting organism multiplies in the blood progressively or intermittently, and in severe cases, profoundly changes it. The inception of a metastatic nidus of infection during the course of a blood mycosis has not only a metastatic aspect, but that of infection by extension from contiguous tissues;—the blood being the contiguous tissue.

¹Read before the Nebraska State Medical Association, Omaha, May 4, 1909.

The seat of election for bone metastasis in acute infective osteomyelitis is usually the diaphysis of long bones near the epiphyseal junction,—i. e., in the spongy portion of the metaphysis; as contrasted with tubercular bone lesions, which elect the epiphysis. Otherwise the process may have its beginning in the periosteum, in the compact bone of the diaphysis, or in the epiphysis. If the latter is attacked, more or less destruction of the epiphyseal cartilage with epiphyseolysis and extension of the inflammatory process to the diaphysis or to the contiguous joint may result.

The factors determining the point of election for metastatic foci are, (1) mechanical, (2) physio-chemic, and (3) developmental. The mechanical factors relate to the arrest of bacteria, bacterial emboli, and infected emboli in the arterioles and capillaries of the part. The physio-chemic factors are what constitute the virulence of the organism and the resistance of the tissues. The developmental factors are incidents of bone growth.

The mechanical conditions provided in the epiphyseal zone of bones, in which there is a physiologic hyperaemia during growth with a slowing of the blood stream; and in which the arrangement of the smaller vessels and the capillary loops with their branches which pass into the primary medullary spaces of the epiphyseal cartilage (Langer); favor the deposition and retention of bacteria, and explain the frequency of acute suppurative lesions in this part of the bone (Lexer), and their greatest prevalence during childhood and adolescence.

Furthermore, the metaphysis being composed of spongy bone, areolar tissue, blood vessels of irregular narrow lumen and embryonal structure, is very susceptible to trauma, embolism, and thrombosis.

That traumatism determines a focus of metastatic infection is indicated by clinical and experimental evidence. "Extensive suppuration develops at fractures or where the bones have been injured after the intravenous injection of virulent cultures made at the time or some days later (Ullman)" (Quoted from Lexer.)

Pyogenic bacteria in the bone marrow do not multiply and set up inflammation unless by their virulence and numbers they can resist the bactericidal power of the tissues, or unless the tissues are devitalized to such an extent that they can no longer form these substances sufficiently to restrain their multiplication. (A. Wasserman) (Quoted from Lexer).

Weichselbaum, and later, E. Frankel, 1893, demonstrated bacteria in the bone marrow of subjects dying of acute infectious diseases, even when there had been no apparent blood infection (Lexer).

The influence of cold in lowering the resistance of the tissues, and of traumatism in disturbing the normal mechanical relations and in altering physiologic activities may explain why boys by 3 to 1 (V. Bruns) are more commonly affected than girls.

Metastatic osteomyelitis in a decided majority of cases affects the long bones, the ratio as between them and the short and flat bones varying in different tabulations between 6.6 (Treudel) and 20 to 1. Foci presenting in the lower extremity of the femur and the upper extremity of the tibia make up an overwhelming majority of the long bone cases, the femur cases making up nearly one-half and the tibia cases over one-third of all. Next in order of frequency among long bones are the humerus, radius, fibula, and ulna. Among the flat bones, the pelvis, lower jaw, and clavicle are commonly involved.

Although acute infective osteomyelitis may terminate in resolution, the cases coming under the observation of the surgeon are almost uniformly suppurative.

Sclerosing osteomyelitis may be taken to be a form in which a nearly even struggle between the infecting agent and the tissues results in resolution, and in abundant hyperplasia which in its final organization represents the conversion of a dense prophylactic rampart into a cicatricial nodule or capsule of bone. It is prone to manifest itself as a recurring osteomyelitis. According to Garré 20 of 559 cases were of this type.

If in the suppurative type, the periosteum is primarily involved, the thickened membrane is destroyed or elevated from the underlying bone by the purulent exudate. This is accompanied by molecular disintegration, i. e., simple osteoporosis, or sequestration of the compact bone corresponding to the area of periosteal involvement. If an aperture through the periosteum gives vent to the pus, it invades the soft tissues, traveling along the muscular and fascial planes, and upon reaching the periarticular tissues it may extend through them setting up a septic arthritis, or upon reaching the skin, may perforate it, forming a sinus. From the periosteum the inflammatory process may invade the compact bone producing an osteitis. By following through into the medulla, necrosis of the entire thickness of the compact substance may result.

If in the suppurative type, the medulla is primarily involved, the serous, haemorrhagic, or purulent material which occurs in grayish yellow foci in the marrow, is the seat of abscesses which by coalescing may convert the medullary canal into a pus cavity. Thus pent up, it seeks egress by

way of haversian canals or a solution of the continuity of the compact bone and may penetrate to the periosteum, and through it to the soft tissues; or it may destroy the intermediary cartilage, invade the epiphysis, and extend into the adjacent joint.

The epiphyseal cartilage may be invaded primarily or secondarily from the adjacent epiphysis or metaphysis, and a chondritis result in partial or complete necrosis of this tissue. Incident to this, epiphyseolysis, or arrest of the longitudinal growth of the bone may occur. An acute epiphysitis with these sequelae is common to infantile cases in which spontaneous fracture may be one of the earliest findings. Inflammation in the intermediary cartilage may extend to the epiphysis, metaphysis, or through the periphery to the soft tissues. In the latter circumstance, the joint will be involved or not, depending upon whether the cartilage lies within or without the joint capsule. Accordingly, destructive inflammation of the intermediary cartilage in the upper extremity of the humerus does not precipitate an arthritis, whereas it does when in the same extremity of the femur.

The symptom-sign complex admits general and local findings, the former overshadowing the latter early in many severe cases and in any case after the mind is sufficiently obtunded. In the metastatic variety, pain in the affected part or referred to some other part and accompanied by a sharp febrile reaction initiated by a chill is the dominant general finding, unless delirium or coma obtain. When the inflammatory exudate is released from the bone spontaneously the acute pain subsides, and a sudden swelling of the soft tissues ensues. Polymorphonuclear leucocytosis is always present and splenic enlargement, septic diarrhoea, myocarditis, endocar-

ditis, and sundry other local inflammatory outbreaks may present themselves when a severe blood mycosis is on. The fever is high and uniform, or intermitting and accompanied by flushing, dry tongue, headache, albuminous dysuria, anorexia, vomiting and malaise. The behavior of the nervous system may give the case a typhoid or meningitic mask. A rash or ecchymosis may show in the skin.

The cardinal local finding early in metastatic cases, is a circumscribed area of exquisite tenderness elicited upon firm palpation or percussion over the affected area of bone and accompanied by more or less loss of function in the part, and increased pain on moving the adjacent joint. Unfortunately the mind may not be cognative, and other local findings which early are only vicariously present must be the more depended upon. They are swelling, redness, oedema; and with epiphyseolysis, fluctuation, deformity, and preternatural mobility. The x-ray may be of great value in determining periosteal thickening, pus pockets, and so forth.

As to the diagnosis of acute metastatic infective osteomyelitis, the current literature largely tries to show how easily it is made with care, and how readily it is missed with carelessness.

In so far as the long bone cases make up the vast majority, and are commonly typical, with care, they are easily diagnosed. But further than this, the clinical picture presents variations, similitudes, and complications equal to the range of possibilities in blood mycosis with deep metastases, and cases of simple adventitious septic embolism.

The diagnostic methods available in acute infective osteomyelitis are such as are directed to ascertain the constitutional and

local conditions. The constitutional condition may be demonstrated by all methods common to the determination of the bacteriology and clinical pathology of any blood mycosis or to the exclusion of specific infective processes with which it may be confounded. The leucocyte count may be of inestimable value in determining a pyogenic infection as against a rheumatic or tubercular disorder. The local condition may be determined:

physically by	{ palpation, percussion, and inspection:
instrumentally by	{ akidopeirastiky, probing, incision, and curettage:
radiographically by	{ the Roentgen ray.

Palpation is the most generally applicable method of determining the location of a bone lesion before the invasion of the soft tissues. It is also useful in outlining the topography of the bone and the consistency of the soft parts. Percussion applies to the same purpose, and when used at one end of a long bone so as to transmit the impact into the joint at the opposite end, it serves to determine tenderness in that joint: tenderness in the shaft of the bone not being so elicited. Inspection determines swelling of the soft parts, the presence of sinuses, and the condition of the superficies.

Akidopeirastiky, the exploration of the bone by a sharp probe thrust through the overlying tissues, is a valuable method of determining rough bone, and for revealing obscured conditions. Probing through open sinuses or a wound subserves a similar purpose, and is one means of determining whether sequestration is complete, preliminary to sequestrotomy. Incision is often

essential to diagnosis, and any exploratory incision extending even into the medulla is a wise choice unless the absence of a pyogenic osteomyelitis can be established beyond a reasonable doubt. Curettage as a diagnostic aid determines as between live and dead bone.

Roentgen rays may be useful as soon as periosteal thickening occurs which may be quite early. Later, they are invaluable in displaying cavities, osteoporotic and osteosclerotic areas, and in general the results of sequestration, and osteogenesis.

The difficulties in diagnosis are conveniently grouped as incident to the following circumstances:

1. cases in stupor,
2. cases presenting an overshadowing assembly of constitutional symptoms and signs,
3. cases presenting an overshadowing assembly of atypical regional disturbances, and
4. cases as peculiarly affected by the anatomic relations of the involved bone.

Stupor robs the surgeon of the dominant symptom, pain; and of the most constantly important, early, local finding, exquisite tenderness in a circumscribed area over the focus within the affected bone. Thus stupor makes a drastic subtraction from the local findings, and in adding to the magnitude of constitutional disturbances withdraws the one of greatest moment.

The presence of an overshadowing constitutional disturbance, especially if accompanied by feeble local manifestations, may lead to a diagnosis of typhoid fever, meningitis, septicaemia, miliary tuberculosis, or deep abscess.

The presence of an overshadowing assembly of atypical regional disturbances is intimately associated with the anatomic re-

lations of the involved bone and is prone to occur in the case of deep-seated bone lesions.

The cases may be grouped with reference to the anatomic relations of the affected bones as follows:

1. Those bones or parts of bones in which a point of tenderness can be easily differentiated as between other parts of the same bone or of contiguous structures;

Examples, { The extra-capsular region
of long bones.
The superficial parts of
many other bones.

2. Those bones or parts of bones in which tenderness can be readily elicited, but not so differentiated with certainty;

Examples, { The short and irregular
bones of the extremities.
The intra-capsular region
of long bones.

3. Those bones or parts of bones that are deep, but more or less subject to palpation and percussion directly or indirectly;

Examples, { Os innominatum, verte-
brae, etc.

4. Those bones or parts of bones that are deep and not so subject;

Examples, { Portions of the base of the
skull.

These groups are not mutually exclusive, but are given as relating certain anatomic features of the bones to the clinical picture.

Group one includes cases that may be confused with acute rheumatism or with gonorrheal rheumatism in the adjacent joint, although this is rarely true if proper clinical methods are followed out. When invasion of the soft parts has occurred a cellulitis or erysipelatous blush may mislead the clinician.

Group two includes cases in the hand, the foot, the upper extremity of the femur, and elsewhere. The difficulties here are

similar to those of group one but more exaggerated, in that it is harder to determine by the same means where the focus is as between the bone, an adjacent articulation or other contiguous structures. A focus in the upper extremity of the femur being intra-capsular is prone to set up an inflammatory reaction in the hip joint and cloud the diagnosis considerably, as between a bone lesion, and a joint lesion of rheumatic, pyogenic, or tubercular origin in mild cases.

Group three includes portions of the base of the skull, the vertebrae, the innominate bone, etc. They give rise to some atypical regional disturbances that are not associated with the two previous groups. Acute osteomyelitis of the cervical vertebrae commonly gives rise to symptoms of meningitis, and is usually followed by basilar meningitis. In the lumbar region, the pain may simulate lumbago, and in the sacrum, induce sciatic neuralgia. By involvement of contiguous soft parts, meningitis, compression myelitis, pleuritis, mediastinitis, retro-pharyngeal and retro-peritoneal abscess, etc., may complicate the bone lesion and mask it. The case may take on an appearance of Landry's paralysis. Osteomyelitis of the ilium with abdominal rigidity and tenderness may be mistaken for peritonitis.

Spondylitis typhosis is a form of acute or sub-acute metastatic infective osteomyelitis appearing two or three months after typhoid fever, and terminating in resolution.

Group four comprises lesions in deep bone so situated that palpation and percussion do not give the usual clinical findings.

One constant complication is septic thrombo-phlebitis. This may be confined to small veinules radiating from the focus, or

extend into large vessels for a considerable distance. It is one of the frequent agencies in regional extensions of the inflammatory process and in metastases. The breaking down of a thrombus may be the origin of a fatal blood mycosis.

The prognosis of acute infective osteomyelitis conveyed by the contiguity of tissues or by direct implantation may be grave or not depending upon the virulence of the organism, the resistance of the patient, the extent and situation of the inflammatory area, and the surgical ministrations.

In the metastatic variety, the result to life may be death by a blood mycosis with or without metastasis, or by fat embolism.

As to the bone, acute necrosis and osteogenesis supervene. Necrosis occurs by molecular disintegration producing an osteoporotic condition, or death en masse making a sequestrum. Necrosis may be sub-periosteal, leaving a cortical sequestrum; sub-endosteal, leaving a central sequestrum; or total, leaving a complete sequestrum. The sequestrum may be a minute spicule of bone or as much as the entire shaft.

Osteogenesis may occur in the periosteum, the medulla, or within the compact bone itself. Periosteal regeneration is of paramount clinical importance. It suffices to invest the underlying sequestrum with a case of new bone—the involucrum. The involucrum may be delicate in so much that spontaneous fracture occurs and after necrotomy a support may be required for a time. Through the involucrum are apertures, i. e., cloacae. Each of these is part of a sinus for the transmission of infectious matter from the sequestrum to the external world. The sequestrum is separated from the living bone by a layer of granulation tissue thrown out by the latter on a plane

determining the lines of demarcation. The sequestrum is digested more or less by this granulation tissue and becomes honey-combed. In this condition, it harbors purulent matter and fosters suppuration as long as it remains. As it separates from the living bone, a pus-filled space opens between the two surfaces.

As to the member of which the bone is a part, it may be lost by a progressive phlegmon or a suppurative arthritis. Otherwise, deformity and crippling may ensue from loss of substance, cicatricial thickening, joint involvement, spontaneous fracture, or arrested bone growth. If there is only a single bone in the part as in the arm and thigh, arrested growth will result in shortening; whereas, if there are two bones as in the forearm and leg, arrested growth in one will result in deformity requiring later corrective surgical interference.

The treatment of acute infective osteomyelitis is pre-eminently surgical. The one constant early indication for treatment in the metastatic variety is incision and curettage of the area of infection, with drainage. If it is probable that the focus is strictly periosteal, the medullary cavity should not be opened. The indications for opening the medullary cavity in the early operation are:

1. Discoloration of the bone.
2. Softening of the bone.
3. The presence of a sinus.
4. An oily exudate, and
5. The continuation of symptoms twelve hours after periosteotomy.

The indications for treatment following the attack are to wait until sequestration is completed, which may require an interval of from a few weeks to six months, and then to perform a necrotomy. This is done by opening the bone cavity and removing the

sequestrum. The resulting cavity may be left as an open wound to fill in by granulation; or it may be filled artificially and sutured after attempting to sterile it by mechanical removal of all infectious substance and the thorough application of reliable antiseptics. Following necrotomy in acute cases an attempt to fill the cavity should be delayed until the deep phlegmonous process has quieted down to a passive exudative condition.

Various fillings have been used. V. Esmarch devised the implantation of the soft tissue flaps by suture and pressure. Neuber fastened the same flaps by nails. Schede allowed the cavity to be filled with a blood clot. Senn, Kummell and others used decalcified bone chips, plaster, cement, copper amalgam, etc. Lücke and Oliver devised osteo-plastic flaps from the involucrum. Mosetig-Moorhof has advocated a plug composed of iodoform 60 parts and spermaceti and oil of sesame each 40 parts. This plug has met with much favor. Being absorbable and antiseptic it does not tend to act as a permanent foreign body or to harbor infection. It has been modified, as by Murphy, who has formulated the following substitute—glycerin 300 parts, sterilized gelatine 300 parts, water 400 parts, formalin 20 parts added immediately before using.

The treatment of an osteomyelitis in an amputation stump, or of any case with a severe phlegmon of the soft parts or an arthritis that does not yield to conservative surgical measures may require amputation of the extremity to save life.

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¹³Acute Osteomyelitis. Dyas, F. G., Chicago, Ill. Surgery, Gynecology and Obstetrics, Vol. VII, No. 5, Nov., 1908.

¹⁴Osteomyelitis. Albee, Fred H., New York. New York Medical Journal, Vol. LXXXVII, No. 23, June 6, 1908.

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¹⁷A Preliminary Report Upon Ten Cases of Chronic Joint Disease Treated by Tuberculin Injections by Wright's Method. Ridlon, John. American Journal of Orthopedic Surgery, Vol. V, No. 1, July, 1907.

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Homeopathic.—"My wife has that awful disease, kleptomania."

"Is she trying to cure it?"

"Well, she is taking something all the while."
—February Lippincott's.

SUCCESSFUL CASES OF PUERPERAL ECLAMPSIA.¹

BY

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A few months ago a young married woman was suddenly seized with convulsions consequent upon her pregnant condition. Her family physician was sent for and after she had a series of convulsions the family decided to call in another physician in the neighborhood. The second physician seeing at once the gravity of the situation, advised heroic measures, but also asked the first physician what he had done in the case. The reply was: "Well, doctor, I have been treating her expectantly." "Well," said the other physician, "you know what to expect, do you not?" And, sad to relate, what they expected occurred.

At the outset let us understand that there is no expectant treatment in puerperal eclampsia. A very grave condition confronts us and we must act and act quickly or repeated convulsions will take our patient away from us.

In order to terminate pregnancy promptly without undue delay we must, of course, pay little heed to the life in utero. This, as you all know, is in direct opposition to the teaching of the Roman Catholic Church, which says that under no circumstances are we justified in destroying the child's life to save the mother. (To quote from "Moral Principles and Medical Practice" by the Rev. Charles Coppens, S. J., Professor of Medical Jurisprudence in the John

¹Read before the Long Island Medical Society, December 7th, 1909.

A. Creighton Medical College, Omaha, Neb).

We are now ready to consider the chief question, viz., whether there can be any cases in which a physician is justified in bringing about an abortion, or in prescribing a treatment from which he knows an abortion is likely to result.

1. It is evident that if he acts with due prudence, and yet from some cause which he did not foresee, and which could not have been foreseen, his treatment brings about a miscarriage, he cannot justly be held accountable for what he could not help.

2. But what if he foresees that a drug or treatment, which, he thinks, is needed for the mother's health, may perhaps bring on a miscarriage? Can he still administer that drug or prescribe that treatment? Notice the question carefully. It is not supposed that he wants to bring on the miscarriage. He does not; he will do all he can to prevent it. Nor will his treatment or drug directly destroy the life of the organism of the embryo; but is intended to affect favorably the system of the mother, and it is applied to her own organism. Still the doctor knows that the prescription may indirectly bring about abortion. Can he prescribe the drug or treatment from which he knows the death of the foetus may indirectly result, the direct purpose being to remove an ailment of the mother?

There is a sound moral principle bearing on such cases: "He who wilfully puts a cause is answerable for the effect of that cause." Therefore, if the effect is evil, he is answerable for that evil. This supposes that he could foresee the danger of such evil effect.

The evil effect is said to be indirectly willed; for it follows from a cause which is directly willed. If, then, you should

give a dose to a pregnant mother which is intended to stop her fever or other ailment, but may also bring on an abortion, the stopping of the fever is indirectly intended, and the abortion is said to be indirectly intended or willed. Those are the received terms in moral science. That which is permitted to result from our acts is said to be indirectly willed.

Are we then always responsible for evil effects permitted or indirectly willed? The principle laid down seems to say so. But then that principle admits of important exceptions. If we could never do an act from which we know evil consequences may follow, then we would scarcely do anything of importance; a young man could certainly not become a physician at all, for he is almost certain to injure some of his patients in the course of his professional life. But if we had no doctors, such a loss would be a much greater evil to mankind than their occasional mistakes. Here then we seem to be in a dilemma, with evil on both sides of us. And then we are reminded of that other principle of which we spoke before, that we may never do evil at all that good may come of it. The solution of this: we should never do evil, but we are often justified in permitting evil to happen; in other words, we can never will evil directly, but we can often will it indirectly; we can do what is right in itself, even though we know or fear that evil will also result from our good act.

This conduct requires four conditions:

1. That we do not wish the evil itself, but make all reasonable effort to avoid it.

2. That the immediate effect that we wish to produce is good in itself.

3. That the good effect intended is at least as important as the evil effect permitted.

4. That the evil is not made a means used to obtain the good effect.

Now let us apply these principles to the case in hand.

1. If the medicine is necessary to save the mother's life, and it is not certain to bring on abortion, though it is likely to do so, then the good effect is greater and more immediate or direct than the bad effect; then give the medicine to save the mother, and permit the probable death of the child.

2. If the medicine is not necessary to save the mother's life though very useful, for the sake of such an advantage, you cannot justly expose the child's life to serious danger.

3. But if the danger it is exposed to is not serious but slight, and the remedy, though not necessary, is expected to be very useful to the mother, you may then administer the medicine; for a slight risk need not prevent a prudent man from striving to obtain very good results.

4. But what if the drug is necessary to save the mother and as dangerous to the child as it is beneficial to her; can you then give the medicine with the moral certainty that it will save her and kill her child? When we show principles clearly we can apply them boldly. I answer then with this important distinction; you can give such medicine as will act on her system, her organs, in a manner to save her life, and you may permit the sad effects which will indirectly affect the child; but you cannot injure the child directly as a means to benefit her indirectly; that would be using a bad means to obtain a good end.

Suppose, then, what is said to be a real case of occasional recurrence in obstetrical practice, namely, that a pregnant mother is seized with violent and increasing attacks of vomiting, so that she must die if the vomiting be not stopped; then you, as well

as the consulting physician called in, can discover no means of relieving the vomiting except by procuring an abortion, by relieving the womb of its living burden. Abortion is then the means used to stop the vomiting. Are you justified in using that means? Abortion is the dislodging of the child from the only place where it can live and where nature has placed it for that purpose. Therefore abortion directly kills the child, as truly as plunging a man under water kills the man. Can you thus kill the child to save the mother? You cannot. Neither in this case nor in any other case can you do evil that good may come of it. The end can never justify the means.

Like the sailor boy who lay helpless at the bottom of the boat after a ship-wreck and who was killed by his comrades to save their own lives, the child is not an unjust aggressor against the mother. It is placed in the womb without its consent and is defenseless. It is the mother who is, as it were, the aggressor from obstacles caused by deformed pelvis, tumors, etc.; and she has not the right to ask or consent to the killing of the child who does not attack her.

In dealing with the following cases of Puerperal Eclampsia no particular attention was paid to the foetus, the idea being to save the mother in the case, and if the child lived so much the better, but if the child was born dead, as occurred in the majority of cases, there were no regrets as everything had been done to save the mother directly and the child indirectly.

The following cases were admitted to the Norwegian Hospital during a period covering nineteen months of interrupted service. This medical service was presided over by Dr. E. E. Cornwall, assisted by the writer.

The cases were seven in number; three occurred in the month of March, and the others in the months of April, May, October and January.

Nationality: Norwegian, two; United States, two; Germany, one; Finland, one; and Italy, one.

Mortality: All the mothers recovered and left the hospital perfectly well. Three infants were born alive, four infants were born dead.

The ages of the patients were twenty years, 24 years, 30 years (2), two at 33 years, and one at 39 years.

Physical build of women. Three were large, well nourished women; four were slight, anaemic, and rather poorly nourished.

Four were of the blond type while three were brunettes.

Four were primiparae while three were multiparae; one was unmarried.

Family history was negative in each case, except that a parent in one of the cases had died of epilepsy; another of kidney disease while another had died of liver disease. The father of still another case had died of general paralysis.

Previous history was also negative in each case except one patient who had had an attack of kidney trouble before but not during pregnancy, while one patient gave a history of a severe attack of scarlet fever when a child.

Premonitory Symptoms:—In two cases there was a severe headache. In one there was marked dizziness. In four, swelling of the feet, hands and eyelids. In three there was loss of vision and in one instance the patient became so blind that she had to go to bed. In two there was great diminution in the amount of urine. In one irritability. In another the greatest suffering was from insomnia. Only one complained of pain in the back.

In six of the women there was sudden unconsciousness with convulsions and coma.

Cases No. 1 and 2 had three convulsions before delivery and none afterwards.

Case three had five after delivery and a good many before, the exact number could not be ascertained for the reason that no one in her home could talk English to the ambulance surgeon.

Case 4 had eighteen convulsions before delivery and none afterwards.

Case 5 had five before delivery and none afterwards.

Case 6 had four before delivery and none afterwards.

Case 7 had five before delivery and none afterwards.

The blood pressure was high before and after delivery except in case 6 where the pressure was only 125 before delivery and fluctuated between 145 and 115 after labor.

In case 7 the blood pressure was 200 plus before and after delivery but gradually became lower on each succeeding day as the following will show:

Oct. 25th; systolic 200 plus, diastolic 195.

Oct. 27th; systolic 195, diastolic 180.

Oct. 29th; systolic 185, diastolic 150.

Oct. 31st; systolic 160, diastolic 140.

Nov. 1st; systolic 155, diastolic 140.

Nov. 2nd; systolic 135, diastolic 125.

Nov. 3rd; systolic 140, diastolic 120.

Nov. 11th; systolic 110, diastolic 85.

The urine in all the cases contained albumen from a slight trace to a solid mass on boiling. As time went on in convalescence the albumen gradually disappeared in every instance.

The specific gravity varied in each case at different times from 1,010 up to 1,028.

Microscopical examinations of the urine showed the presence of granular, epithelial and hyaline casts; also leucocytes, blood

cells, pavement epithelium, mucus, pus cells, urates and flocculent sediment.

The urine varied in amount in the different cases at different times but was always suppressed before delivery. The largest amount voided in twenty-four hours was one hundred and twenty-nine ounces; the smallest twenty-four ounces.

The temperature per rectum varied from 99.8 to 104 which was the highest temperature recorded in any of the cases at any time. The highest temperature was always before delivery; in fact there was a little rise in temperature in every case before delivery.

The pulse ranged from 120 in the different cases up to 160. The pulse rate was in each case more rapid before delivery than subsequently. Abnormal tension or hypertonia was always present at some time or another in each case.

The respirations varied from twenty-five per minute up to thirty-three. The respirations were also highest in each case prior to labor.

It might be of interest to compare the foregoing figures with other statistics mentioned from time to time.

Harrar states that beginning with February, the number of cases increases during March, reaching the highest point in April and then steadily diminishes, finding the lowest level in November. The curve of this rise and fall nearly corresponds to the curve of the rainfall, which fact he states, might explain the well known theory that climatic conditions have something to do with the disease, although it is not clear why periods of unsettled weather should have the effect of producing a convulsive toxaemia in pregnant women.

Regarding the frequency of the condition, McPherson states that it occurred in

1.7% of all labors in the wards of the New York Lying-in Hospital. The high percentage was due to the fact that a hospital is the clearing house for so many of the cases occurring in the city and the probability is that it is about eighteen times as frequent in hospital as in private practice.

The condition is twice as common in primiparae as in multiparae, being 64.4 in the former and 35.6% in the latter.

Regarding the age of the patient in 250 cases the greatest number of cases occurred between the ages of 20 and 25 years which is in accord with the fact that the greatest number of eclampsias occur in primiparae.

The maternal mortality of eclampsia is given by various authors as ranging from five to fifty per cent.

The foetal mortality is usually from 33 to 50%.

Treatment.—The treatment pursued was first the employment of certain drugs to ameliorate the symptoms, and the use of the hot pack. Cathartics were also given but the main idea was at all times to bring on labor and terminate pregnancy no matter what the period of utero-gestation. The idea was always kept in mind that the longer the patient was left in the condition of toxaemia of the convulsive type the slighter were her chances for life with each convulsion. Likewise the child, for the more convulsions the greater are the risks to the life of the foetus.

Labor was induced by means of the catheter and forcible dilatation in five cases, two of which were delivered with forceps. In case 2 delivery occurred without interference shortly after she reached the hospital. In case 3 delivery occurred before the arrival of the ambulance though she continued to have convulsions for some time afterwards.

The drugs used in their order of frequency were veratrum viridi, diuretin, morphia sulphatis, atropine, sulphatis nitroglycerin and potassae citratis. In one case, namely No. 7, the tincture of aconite worked well. In case 4 the patient was in a condition of pulmonary oedema; atropine in 1/100 grain doses combined with fluid extract of veratrum viridi appeared to pull her through. She was also given a ten gallon rectal irrigation, and digitalis leaves sprinkled over a mustard plaster were applied over the kidney region. This patient was delivered of her child prior to the attack of pulmonary oedema.

Of all the drugs, however, veratrum viridi stands at the head of the list in our experience when given in fifteen minim doses hypodermically every two or four hours till it slows up the pulse perceptibly, sometimes bringing it down as low as seventy per minute.

For failing heart conditions consequent upon the toxæmia we have had to fall back on strychnine, tincture of strophanthus, and spiritus frumenti. For the extreme nervousness and irritability bromide of soda was given in almost all the cases.

Chloral by rectum was used in three cases but only a few doses were given in each instance.

The diet consisted of milk diluted in different forms, cereals, gruels, toast, oatmeal jelly, rice and prepared buttermilk.

CONCLUSIONS.

From our experience in these cases we are led to believe:

1. That there is no expectant treatment in a consideration of Puerperal Eclampsia.
2. That early emptying of the uterus will bring about the best results.
3. That veratrum viridi is a very important drug in the treatment of convul-

sions due to the toxæmia of pregnancy.

4. That atropine sulphate should be tried in desperate cases especially where there is a tendency to pulmonary oedema.

5. That while careful nursing, hot pack applications to kidney region, and diet, are important, the prime indication for treatment is the early evacuation of the uterus, thus bringing about improvement in the metabolism, improvement in the circulation by reducing blood pressure, improvement in the condition of the urine, improvement in the temperature, pulse and respiration, saving the heart and the cardiac muscle from unnecessary strain, in a word the bringing about of metabolic changes so that the balance between absorption and elimination has been increased in favor of elimination.

428 47th St., Brooklyn, N. Y.

SURGICAL HINTS.

In the medicinal treatment of acute intestinal obstruction, atropin is often of great value.

Enlargement of the tubercles of the tibia is not of unfrequent occurrence in football players.

Anesthesia in women, as a rule, requires more time than in men, but less ether is needed to induce and maintain narcosis.

Cholecystitis and pyelitis sometimes closely resemble each other, and a thorough analysis of the urine should never be omitted in doubtful cases.

As Reginald Harrison has said, "it is very easy to spoil a stricture and so lose the way through." In exploring the urethra for a suspected stricture the greatest care should be exercised, as any neglect in this respect may render subsequent passage of sounds more difficult.

—*Int. Jour. of Surgery.*

CORRESPONDENCE.

LETTER FROM THE PHILIPPINES.

OBSTETRICS UNDER DIFFICULTIES.

To the Editor American Medicine:—

Physicians in city practice, where it is always possible to get nurses or hospital care in emergencies, have no realization of the difficulties of practicing among the pioneers on the frontier. It is generally supposed that the pioneer days are over, but in reality they have just begun. For a long time to come, those physicians who think of casting their lot with the soldiers and civilians upholding American civilization in the Philippines, will be compelled to practice in most primitive conditions, often without the slightest aid from "the neighbors," or even the simplest conveniences supposed to be essential. The following letter was the result of an inquiry of an American officer serving with Malay troops, as to whether any of the swarms of native women in the camp, could be obtained to nurse his wife in her expected confinement. Incidentally it is a rare instance of "English as she is spoke" by races who are learning it for the first time. There is a distinctive tone to the frivolous seriousness of the Hindoo attempts, and now our Malays are furnishing a new type of these delicious misuses of words. Incidentally, too, a word might be said about the courage of the American woman, who, in spite of dangers, will go anywhere on earth where duty sends her husband. The stories of heroism in English East Indian literature are now being silently repeated over and over again in out of the way places in the Philippines and we all take it as a matter of course—all in the day's work, with never a Kipling to sing it.

Very truly,

X.

THE LETTER.

September 15, 1909.

Second Lieutenant

Sir:—In regards to companions that you need to accompany your wife, I regret

that the most depest of sorrows to tell you that I have used the best influence I can find to some woman among the soldier's family in our company, for the purpose of taking care of your wife for a week; but no one of the said families desirous to comply such combination. But should you be away or detailed as an officer of the day, they can favor you to accompany your wife while you are absent. It is hard for us to coincide then to a combination as these, as they don't want to make any negligence to their duties with their husbands.

I hope that this reasons will please you. I remain,

Respectfully yours,
1st Sgt. ———Co. Phil. Scouts.

ETIOLOGY AND DIAGNOSIS.

Gastroptosis and Its Causation.¹—Boninger in a recent address called attention to the normal fixation of the stomach, to which, along with the suspensory ligaments and the cardia, the intestines belonged, which on their own part were supported by the abdominal wall. It was entirely due to this arrangement that the stomach did not fall lower when the diaphragm sank when emphysema was present.

Gastroptosis was always accompanied by lengthening of the stomach, as Mainert and, later Holzknecht had pointed out. This was not simply a distension of the stomach, as the lengthening could be demonstrated by the Röntgen rays even when the stomach was empty. It was rather brought about by a longitudinal growth of the body.

That the length of the stomach varied greatly even in healthy individuals was shown by examination of 300 healthy adults, where the length varied between 14 and 28 cm. The longer stomachs were in women with a paralytic habitus. The speaker did not doubt that there was a relation between the length of the stomach and the body growth.

Lengthening of the stomach was not a sequence of the gastroptosis, with its attendant stretching, otherwise shortening

¹ Med. Press and Circular, Feb. 23, 1910.

would take place on prolonged rest in bed, and there was no question of that. Lengthening of the stomach was also met with in the cadaver, although the majority of people died after a lengthened stay in bed.

Before the twelfth year of life lengthening of the stomach was not met with. From that time on, the condition was met with with increasing frequency. If the lower thoracic aperture was small, as in the habitus paralyticus, the stomach grew in length and downwards, according to the law that the form and position of an organ were dependent on drawing and pressure. As the lower limit, before speaking of gastropptosis, he took the level of the umbilicus in his Röntgen examinations, and found gastropptosis in 26 per cent. of the men, but in 63 per cent. of the women, and as frequently in nulliparæ as in those that had borne children. Antecedent labour, therefore, could not be looked upon as a contributory cause.

Gastropptosis was not a disease, for many people had a low-lying, lengthened stomach without any symptoms. If symptoms did appear, improvement was brought about by good food, strengthening of the abdominal muscles, and gymnastic exercises, tending to enlargement of the upper thoracic aperture. More important, however, than all this was prophylaxis, a healthy bringing up that did not neglect bodily exercises in childhood and youth.

TREATMENT.

The Stem Pessary.¹—Carstens recommends the stem pessary in indicated cases calling attention to the fact that the introduction of the stem requires dilatation of the uterus. As this is very painful, it is necessary to give an anesthetic, although it may take only five minutes. Then the absolute cleaning of the vagina is necessary.

Carstens uses the Chambers hard rubber stem, although he admits others may be as good. That everything be aseptic he boils the stem with the instruments, but, as the two arms of the stem come together

while boiling, he immediately, when taking them out of the hot water, separates them and dips them in cold water so that they will stay open. Generally the patient is on the back; with vulsellum forceps the operator catches a lip of the uterus, pulling it down somewhat and straightening it out as much as possible. A sound is now inserted to get the exact length of the uterine cavity. Then he selects a pessary a little shorter ($\frac{1}{4}$ or $\frac{1}{3}$ inch) and have it ready for insertion by fixing it into the introducer. Now dilate the uterus. As this is often small it is necessary to start with a fine-pointed dilator. Use the Notts dilator. This generally is not sufficient and Carstens then uses the Goodell-Erlanger dilator or any other kind, thoroughly opening the uterus. If there should be any endometritis or discharge from the cervix thoroughly curette the cervix only and swab it out with pure phenol, wiping it dry. The stem can then be inserted. The button at the end must be on the cervix. The stem is kept in place by a finger on the button; then the introducer is pulled out and the thing is done. If indicated, a Thomas-Hodge pessary is inserted. The physician must see that the button is in the center of the retroversion pessary. There may be a little blood lost from the dilatation; therefore phenolized douches are given twice a day for a day or two while the patient remains in bed. Some can get up the next day, but, as a rule, they are kept in bed for forty-eight hours. Then they can get up and go about their usual vocations. They can do anything and everything, as they always did, and never know that they are wearing stem pessaries. Once in a great while in women who are very constipated the pessaries may be forced out by straining. This sometimes also occurs in cases of relaxed vaginas. In the latter the soft rubber inflated pessary will often help to retain the stem in place.

The Treatment of Constipation.¹—Verbrycke says that it should be insisted upon that the patient go to the closet at a certain time each day, preferably just after breakfast, whether he have the desire

¹ J. H. Carstens, M. D., Detroit, Jour. A. M. A., Nov. 20, 1909.

¹ J. R. Verbrycke, Jr., M. D., Washington, D. C., Med. Record, Mar. 12, 1910.

or not. The mind should be concentrated upon having a movement for at least five minutes, and should not be occupied by other matters as in the habit of reading at stool. If an evacuation does not result no further attempts should be made, unless there is a distinct desire, until the following day at the same time. Impress the patient with the efficacy of this, as the results of concentration of the mind are quite remarkable. To show how easily habits are formed in many cases I will relate the instance of a man I know, who used to have several movements a day. It was inconvenient, so he disregarded as far as possible all sensations coming at other times than after breakfast, with the result, in a couple of weeks, of having the desire only at that time. Later he tried, as an experiment, to see if he could produce two movements a day at will, and found on going to stool morning and evening for a week the desire came at these times.

The diet in simple chronic constipation is not rigid. Usually too much of the following should be barred: proteins leaving little residue, dry foods, eggs, thick soups. Forbid strong tea, cocoa, chocolate, huckleberries, and anything else which contains tannic acid. Plenty of the following foods, which are somewhat laxative, are to be eaten: oatmeal, cornmeal, buttermilk, cream, butter, olive oil, maple syrup, molasses, and nearly all the fruits, raw and cooked, except bananas, huckleberries, and gooseberries. As a rule it is only necessary in arranging the diet to take out the most indigestible things the patient has been eating and add the laxative fruits, oatmeal, etc., in sufficient quantities. If the patient has been gluttonous and the bowel has been dilated restrict the amount of vegetables containing cellulose. But if, as is usual, not enough food containing residue has been eaten, give a diet containing both meat and vegetables with the latter, and fruits in preponderance. Of nearly equal importance is the frequent drinking of cold water, in small amounts. For its tonic and stimulating effect a glassful should be taken every morning immediately on awakening and a half glass at intervals during the day.

Outdoor exercise when possible should be recommended. It will not only serve to improve the general condition and nerve tone, but will strengthen, among others, the muscles entering into the act of defecation. Walking or any of the mild sports are beneficial. If business or other reasons prevent this, ten or fifteen minutes morning and evening devoted to indoor physical exercise will help to take its place. When exercising the window must be open and deep breaths be taken.

A cold sponge bath in the morning followed by a brisk rub is a great stimulant. For those who can stand it a cold plunge may be substituted.

Usually all of the preceding lines of treatment are to be instituted with or without the addition of one or more of the procedures about to be mentioned. Deep abdominal massage in the morning before breakfast often does good, or the same result may be obtained by rolling a croquet ball over the course of the colon for five minutes before going to stool. Vibration by a mechanical vibrator or faradic electricity with slow interruptions are useful. Irrigations may be given of ichthyol, 1 dram to the quart, using them daily for a time and then every other day for a while longer. After a short treatment with the irrigations oil enemata of 6 ounces of olive oil, with or without a little ichthyol, may be given at night, to be retained and passed the next morning, when a movement will usually result. Or again, small cold water injections, 75° to 65°, powerfully stimulate the musculature of the intestines. It is occasionally necessary to clear the bowel out by a purge in some cases, but this should not be repeated any oftener than is absolutely necessary.

As regularity becomes established the artificial aids should gradually be discontinued, the diet and personal hygiene still being observed to make the improvement permanent. A course of several weeks or months of judicious treatment is usually followed by the most encouraging results.

Treatment of Haemoptysis.¹—What is to be done in a case of profuse hæmoptysis? By far the most important thing is to remember the natural way in

¹The London Practitioner, Mar., 1910.

which the hæmorrhage ceases—by the formation of a thrombus which closes the eroded vessel. The object in treating the patient is to favour this thrombosis, to diminish the activity and force of the circulation, so that the natural process of healing may take place. Therefore keep the patient quiet by rest in bed, with the shoulders slightly raised. In the next place it is important to restrict the dietary very considerably, and to diminish the liquids. This tends to diminish the blood-pressure. Give the food cold at short intervals, and substitute some meat-essence for the beef-tea. Small, carefully-made sandwiches are useful in these cases. Give some ice to suck to relieve thirst. With the object of promoting hyperæmia of the cutaneous vessels, and thus diminishing the blood-pressure in internal organs, the surface of the body should be kept warm—wrapping the legs in hot blankets and the use of hot-water bottles are most important. At the same time, plenty of fresh, cool air must be ensured. The friends are too apt to think that fresh air is injurious. With the object of reducing the blood-pressure and favouring thrombosis, it is important that the bowels should act freely, and a purgative is usually indicated at the onset of hæmoptysis. A dose of calomel and colocynth, or blue pill, followed by a saline, is often indicated; the action of the bowels may be kept up by small doses of magnesium sulphate (gr. 20-30), with a little sulphuric acid, given three or four times daily. The cough disturbs the patient and tends to interfere with quiescence. In treating the ordinary case of pulmonary tuberculosis the cough remedies are restricted to the night, but when hæmoptysis supervenes it is usually wise to give the cough remedies also during the day—either a linctus or a lozenge; the use of a medicated respirator should be discontinued. With regard to drugs, these are of the least importance. Astringents such as gallic acid are considered useless. Morphia used with care and judgment is the best hæmostatic: it calms the patient, diminishes the blood-pressure, and thus tends to favour the natural arrest of the bleeding by thrombosis; gr. $\frac{1}{4}$, more or less, with gr. 1-100 atropine, administered hypoder-

mically and repeated from time to time as may be necessary. The use of ergot in these cases is deemed to be useless. The ice-bag so often employed is also of very doubtful value. It may, however, help to keep the patient quiet, and, if so, is advantageous.

Pinworms.¹—Treatment according to Zinn should aim to destroy the young in the small intestine by a vermifuge internally, washing out the adult parasites in the large intestine by high enemata, supplemented by scrupulous care to cleanse the hands before and after meals and after defecation to prevent ingestion of the eggs. He tries to give the calomel and santonin between meals, commencing with 0.5 gm. (7.5 grains) each of calomel and jalap in powder at 3 p. m., with a warm soapsuds enema at 6 p. m. the first day. The next day he gives 0.05 gm. (0.75 grains) santonin and 0.1 gm. (1.5 grains) calomel at 8, 10 and 11:50 a. m., with two tablespoonfuls of castor oil at 2 p. m., and again at 4 p. m. The third day a full warm bath is taken and morning and afternoon a soapsuds enema; this is repeated the fourth and fifth days with a full bath at night. This completes the course, after which the body and bed linen should be changed. The dosage should, of course, be smaller for children. The food should be light and fluid and he prefers to give the course under conditions that permit microscopic examination of the stools. With this simple course of treatment Zinn claims to have cured in less than a week a condition that had tormented the patients for years.

DIETETICS AND HYGIENE.

The Diet After Abdominal Operations.²

Paterson says that there is still a lingering superstition that patients must be half-starved after an abdominal operation. A few months ago a surgeon writing on this subject advised nothing but water for twelve hours, and in stomach operations nothing but a little water for three days.

¹ W. Zinn, M. D., *Therap. Monat.*, Berlin, Jan., 1910.

² *The Practitioner*, London, March, 1910.

The author regards such starvation as totally unnecessary, and in old or feeble patients positively harmful. Even after operations on the stomach he begins feeding his patients at once. In one of his gastro-jejunostomies for pyloric obstruction, he allowed the patient to have two mutton chops and a milk pudding on the third day. He was thoroughly exhausted by months of vomiting, and was ravenously hungry. He thoroughly enjoyed his meal, and was all the better for it. Paterson does not, of course, suggest this as a routine treatment, but mentions the case to emphasize how groundless is the fear of early feeding. If the anastomosis be efficiently performed, the risk of the sutures giving way may be neglected so far as feeding is concerned.

As soon as the patient wishes a drink small quantities of hot water are given, and if this is retained one ounce doses of milk diluted with two parts of water. The quantity is gradually increased up to two ounces hourly. A cup of tea is allowed the same day as the operation if the patient wishes it. On the day after the operation, Benger's food and calves' feet jelly are given as well as milk. As soon as the bowels have been opened the patient is allowed fluid *ad libitum*, eggs, thin bread and butter, and other soft solids, and usually ordinary diet is resumed in a week or ten days. As a general rule the patient's inclination is a reliable guide to the quantity of food required, although in a few cases some coaxing and diplomacy are necessary to induce the patient to take adequate nourishment. It is impossible to lay down hard-and-fast rules as to feeding, and general rules have to be modified in individual cases. After operation for septic peritonitis no food is given by the mouth until the bowels have been thoroughly well opened. After gastro-jejunostomy for gastric or duodenal ulcer, especially if associated with hyperacidity, the diet must be more limited in quality, although the quantity need not be curtailed. Paterson always urges these patients to keep on a milk diet for at least six months. On the other hand, after gastro-jejunostomy, or partial gastrectomy for cancer, he feeds the patients up more rapidly, allowing mutton or beef essence,

jelly, eggs and Benger's food on the second day, and often fish or chicken cream on the third day. Patients who have been exhausted by weeks or months of vomiting will not stand starvation, and their tissues possess feeble power of repair unless they are provided with plenty of nourishing food.

THERAPEUTIC NOTES.

Liquid Soap.—A liquid soap, without the disagreeable odor and stickiness of ordinary soft, or green soap, may be made as follows:

White Castile soap	300 Grams
Stronger ammonia	25 Grams
Alcohol	350 Grams
Soft water	325 Grams

This contains the same amount of soap as tincture of green soap. Cresol (10 Cc.) may be added to give it an "antiseptic odor."—*Am. Jour. of Clin. Med.*

Expectorants.¹—The best drugs to increase the secretion of the mucous membranes of the upper air tract, says Osborne in the course of a most interesting series of articles, on *Suggestions for the Pharmacopeia of 1910*, are ammonium chlorid in small doses, ipecac, and iodids.

While ammonium chlorid is disagreeable to take, if given in a sour mixture it is not seriously unpleasant. Just because a patient happens to have a cold of some sort it is no reason why he should have his stomach knocked out, his digestion interfered with, and his appetite lost by nasty, sweet-tasted expectorant mixtures. There is no need for squills in any form as an expectorant. There is no need for senega in any form as an expectorant. The syrup of tolu makes a nice, smooth menstruum, but still is sweet. Tolu has no expectorant properties whatsoever. The syrup of wild cherry is not unpleasant, but still is sweet, and any sedative effects form the minute amount of hydrocyanic acid that it contains is mythical. These last two syrups, however,

¹O. T. Osborne, M. D., *Jour. A. M. A.*, Feb. 5, 1910.

should be retained in the Pharmacopeia as making a change in the appearance and taste of a cough mixture that must be repeated if the previous taste palls on the patient. There is no use for the fluidextract of wild cherry.

Of all expectorants or stimulants to mucous membrane secretion, there is none yet offered that is better than ammonium chlorid. Small doses of it in the early stages of congestion, frequently repeated, and larger doses, infrequently repeated, in the second and third stages of bronchitis, or an allied condition, should be given.

Ipecac is another valuable drug to increase the secretion of mucous membranes. It renders the mucus more liquid and less tenacious. The dose as an expectorant should be very small, as large doses, of course, will cause nausea. There is also no specific ability of ammonium chlorid and ipecac to act only on the mucous membranes of the upper air passages. They are just as valuable for catarrh of the bile ducts, or any other mucous membrane.

The following combination as an expectorant is a good one:

R.	gm. or c.c.	
Codeinæ sulphatis	20	gr. iv
Ammonii chloridi	5	5iss
Syrupi ipecacuanhæ	5	or fl.3iss
Syrupi acidi citrici	25	fl.3i
Aquæ, ad	100	ad, fl.3iv

M. et Sig.: A teaspoonful, in water, every two hours.

The above prescription is simply a frame. The codein might be omitted if there were no unnecessary cough, i. e., cough without expectoration. Heroin might be used in its place, if one preferred. The dose of the ammonium chlorid might be increased, and the frequency of the administration decreased. The ipecac might be omitted, if the expectoration were free. If the patient were a child, the syrup of citric acid might be changed to syrup of tolu or syrup of prunus virginiana, if deemed best.

The protective power of re-vaccination is not sufficiently realized by sanitarians, civil or military, and there is a tendency to repeat the operation unnecessarily, with the consequent though small risk of

pus infection and the worse risk of stirring up the opposition of the fanatical anti-vaccinationists. Only a very small percentage of persons successfully vaccinated in childhood ever contract smallpox and few die of it, but these failures to maintain immunity make it incumbent upon everyone to submit to one re-vaccination in adult life. There are precious few cases of smallpox in such re-vaccinated persons, and the statistics published some years ago by Welch of Philadelphia, raised considerable doubt as to whether a single one of them, really had been successfully re-vaccinated. That is, there are no cases in which two good normal scars proved to be the results of successful vaccination in infancy and adult life respectively. If this is true, it is unnecessary for a general practitioner to vaccinate himself and all contacts every time he finds a case.

It is highly necessary, then, to find instances of smallpox after two such normal vaccinations. At present, there is ample justification for the charge that we re-vaccinate too often. Soldiers sometimes have it performed twenty times in as many years and it seems ridiculous. Nothing should be done, of course, to put the slightest obstacle in the way of universal vaccination but it is beginning to be felt that too much re-vaccination is one of these obstacles by causing undue opposition. We hope therefore that there will be detailed reports of every case of smallpox in which it is certain that there have been two successful vaccinations in infancy and adult life respectively, being careful to eliminate cases of spurious vaccination or those in which pus infection has been mistaken for a success.

SOCIETY PROCEEDINGS.

EASTERN MEDICAL SOCIETY.

At the regular monthly meeting of the Eastern Medical Society, held March 11, 1910, President A. J. Rongy in the chair, the following program was followed in regular order:

1. *Presentation of a Case of Congenital, Unilateral, Bony Occlusion of the Posterior Nares*, by John Guttman, M. D.

2. *Presentation of a New Cysto-urethroscope, Embodying the Nitze Principle*, by Leo Buerger, M. D.

3. *Presentation of a pathologic specimen cast of the entire male urethra, shed after accidental cauterization with strong silver solution*, by A. L. Wolbarst, M. D.

4. Papers. (a) Vesical Calculus, by Martin W. Ware, M. D.; (b) Vesical and Renal Tuberculosis, by A. E. Isaacs, M. D.; (c) Gonococcic Infection of the Bladder, and Urethra in the Female, by Augustin H. Goelet, M. D.; (d) Neoplasms of the Bladder, by Albert A. Berg, M. D.; (e) The Bladder in Prostatic Obstruction, by Parker Syms, M. D.

Discussion by Eugene Fuller, M. D., Ralph Waldo, M. D., L. J. Ladinski, M. D., A. L. Wolbarst, M. D., John F. Erdmann, M. D., Arnold Sturmdorf, M. D., Charles Goodman, M. D., and others.

NOTES ON MODERN PHARMACEUTICAL REMEDIES.

BURNHAM'S SOLUBLE IODINE.

Description. Burnham's Soluble Iodine is a dark brown liquid with a slight odor of iodine and characteristic taste. Is readily miscible with water in all proportions.

Formula. The analysis of the Council on Pharmacy of the A. M. A., showed that this product contained approximately 3.0 gm. per 100 c.c. of free iodine and 2.0 gm. combined iodine. The analysis of our committee shows a slightly larger percentage. Allowing for error it is fair to state that the free iodine is very close to 3.5 gm. per 100 c.c. and the combined iodine 2.5 gm. in the same proportion. The preparation is slightly acid.

Physiologic Action. The action of Burnham's Soluble Iodine is that of the iodides generally—alterative, tonic and reconstructive—with the added advantage of being less irritating to the stomach and intestines, more freely absorbable and apparently more prompt in effect. It is not caustic or escharotic, and it is claimed that it can be tolerated by many patients who are unable to take iodine in any other form.

Uses. Burnham's Soluble Iodine has a field of utility identical with the iodides, broadened materially, by its special qualities. It is recommended in syphilis especially in the late stages and in the various sequelae of this disease; in rheumatic and allied diseases; in constitutional disorders such as scrofula, glandular enlargements, goitre, etc.; in many skin diseases, acne, eczema and psoriasis particularly; in respiratory diseases, such as chronic bronchitis, laryngitis, etc; in circulatory diseases, such as arterio-sclerosis, angina pectoris and other heart affections; in many diseases of women; diseases of the eye, particularly those of specific origin; as an antiseptic for surgical purposes and wound treatment in general; finally wherever iodine or the iodides would be properly indicated.

Dosage—Internally. Dose—2 to 30 drops well diluted, 2 to 6 times daily, preferably on an empty stomach.

The dose should be gradually increased in syphilis and other systemic conditions, where large doses are necessary, until the desired therapeutic effect is obtained.

Hypodermically: 2 to 15 minims, 25 to 50% dilution.

Externally. As an antiseptic 2 drachms to a pint of water will be found effective for the average purpose. This may be increased in strength when necessary.

Special Advantages. Burnham's Soluble Iodine, it is claimed, is more freely and completely absorbable than any other preparation of iodine, with less of the objectionable features common to the usual methods of administration. As a consequence, it is claimed that the therapeutic results from its use are manifested more promptly and decisively, a claim apparently well substantiated by extensive clinical observation.

Manufacturers. The Burnham Soluble Iodine Co., Auburndale, Mass.

A crop of boils is usually the result of an infection scattered by a single boil, though certain constitutional states, by lowering the vitality of the tissues, may render them an easier prey to the invading germs. Therefore, in the treatment of boils every care should be taken to protect the surrounding skin from infection.

BOOK NOTICES.

International Clinics. Volume IV. Nineteenth Series, 1909. Published by J. B. Lippincott Company, Philadelphia, Pa.

Medical Chemistry. Seventh Revised Edition. Ninety illustrations. By Elias H. Bartley, B. S., M. D., Ph. G. Published by P. Blakiston's Son & Co., Philadelphia, Pa. Price \$3.00 net.

Fundamentals and Requirements of Health and Disease. In three parts. By Thomas Powell, M. D. Illustrated with many original drawings. Published by The Powell Publishing Company, Los Angeles, Calif.

Spondylotherapy. By Albert Abrams, A. M., M. D., (University of Heidelberg) F. R. M. S. Illustrated. Published by The Philopollis Press, San Francisco, Calif.

Diagnostic Therapeutics. By Albert Abrams, A. M., M. D. (Heidelberg). One hundred and ninety-eight illustrations. Published by Reiman Company, 1123 Broadway, N. Y. Price, cloth, \$5.00.

The Dietetic Treatment of Diabetes. By B. D. Basu. Published by The Panni Office, Bhuvaneshvari Ashram 40, Bahadurganj, Allahabad.

Rational Immunization in Tuberculosis. By E. C. Hort. Published by John Bale, Sons & Danielsson, Ltd., 83-91 Great Titchfield Street, Oxford Street, W.

ITEMS OF CURRENT INTEREST.

The International American Congress of Medicine and Hygiene will be held May 25 in Buenos Ayres, Argentine Republic, in commemoration of the first centenary of the May revolution of 1810. In order to facilitate the contribution of papers and exhibits from the United States, there has been appointed by the President of the Congress, Dr. Eliseo Cantón, and the Minister of the Argentine Republic at Washington, a committee of propaganda, of which Dr. Charles H. Frazier of Philadelphia is chairman, and Dr. Alfred Reginald Allen of Philadelphia is secretary. The Congress has been divided into nine sections, each section being represented in the United States by its chairman in this Committee of Propaganda, as follows: I. Biological and Fundamental Matters, Dr. W. H. Howell, Baltimore, Md. II. Medicine and Its Clinics, Dr. George Dock, New Orleans, La. III. Surgery and Its Clinics, Dr. John M. T. Finney, Baltimore, Md. IV. Public Hygiene, Dr. Alexander C. Abbott, Philadelphia, Pa. V. Pharmacy and Chemistry, Dr. David L. Edsall, Philadelphia, Pa. VI. Sanitary Technology, Dr. W. P. Mason, Troy, N. Y. VII. Veterinary Police, Dr.

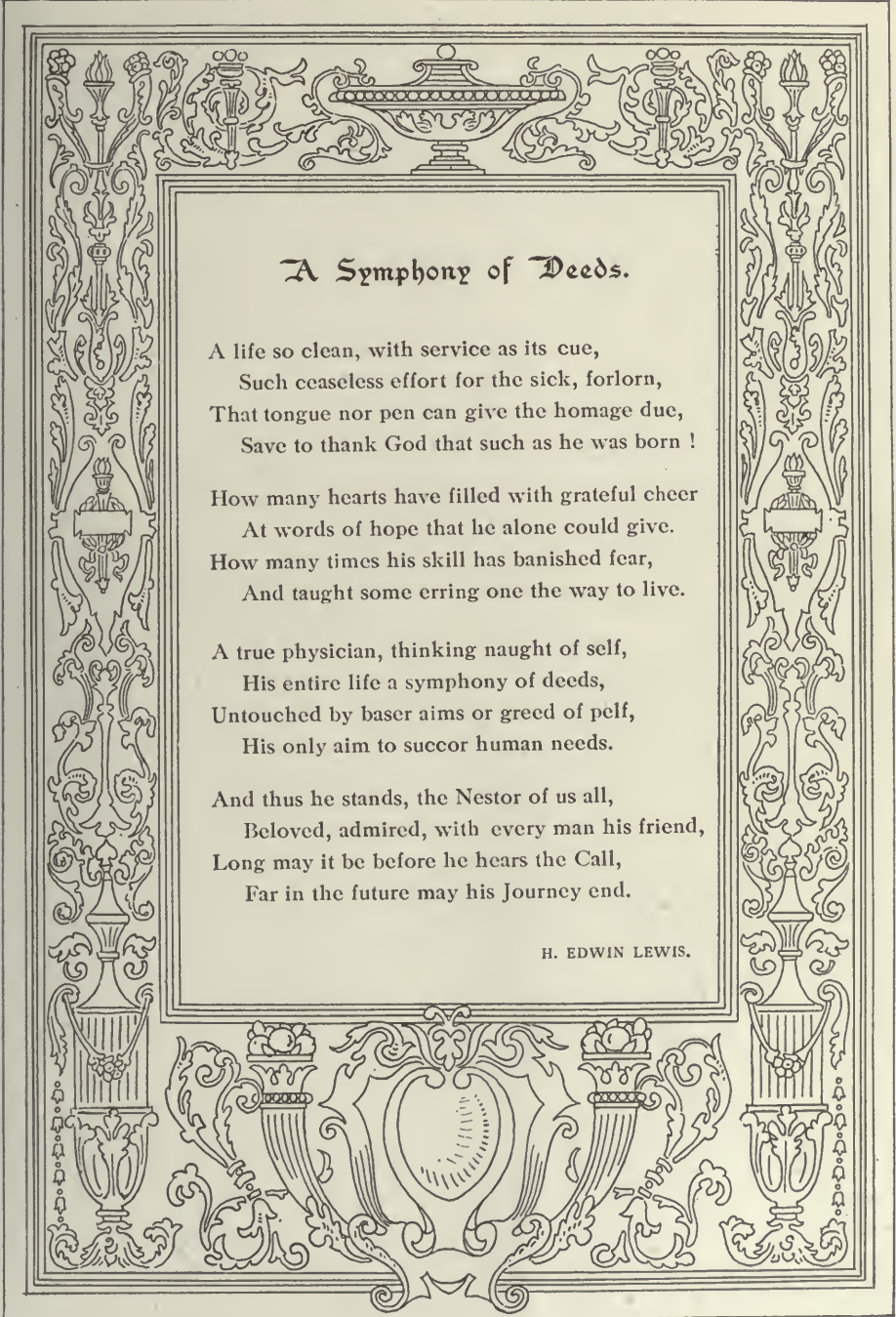
Samuel H. Gilliland, Marietta, Pa. VIII. Dental Pathology, Dr. George V. I. Brown, Milwaukee, Wis. IX. Exhibition of Hygiene, Dr. Alexander C. Abbott, Philadelphia, Pa. It will not be necessary for one contributing a paper or exhibit to the Congress to be present in person. Arrangements will be made to have contributions suitably presented in the absence of the author. The official languages of the Congress will be Spanish and English. Members of the following professions are eligible to present papers or exhibits: Medicine, pharmacy, chemistry, dentistry, veterinary medicine, engineering, and architecture. Papers may be sent direct to the chairman of the particular section for which they are intended, or to Dr. Alfred Reginald Allen, secretary, 111 South Twenty-first street, Philadelphia, Pa.

AN IMPORTANT ANNOUNCEMENT.

Those of our readers who are interested in the various forms of physiologic therapeutics (including Hydrotherapy, Electrotherapy, Massage, Hyperemia, etc.) will be glad to know that it is proposed to shortly inaugurate a new journal devoted solely to the delineation of the progress made in these various lines of therapeutic endeavor.

The American Journal of Physiologic Therapeutics will be published bimonthly and the subscription price will be \$1.00 a year. The names and addresses of all interested physicians should be sent in and those who are desirous of subscribing at once may enclose their remittance when writing. It is to be hoped that a widespread interest may be aroused in this matter. Write now, while this is fresh in your mind, to *The American Journal of Physiologic Therapeutics*, 72 Madison Street, Chicago, Ill.

Columbian spleen is the name given to the large spleens so often found post-mortem in Panama. It is partly "an interstitial fibrosis and partly lymphoid hyperplasia," and in no way related to Kala-azar of India. Dr. Samuel T. Darling now reports (*Jour. of Experimental Medicine*, July 17, 1909) finding in Panama, small round or oval organisms in a fatal disease resembling Kala-azar, though they differ somewhat from the Leishman-Donovan bodies which cause the Indian disease. Perhaps here we have a door opened into a new American pathological field and we may expect further discoveries of profound importance. Our lurking enemies are being found out with commendable rapidity.



A Symphony of Deeds.

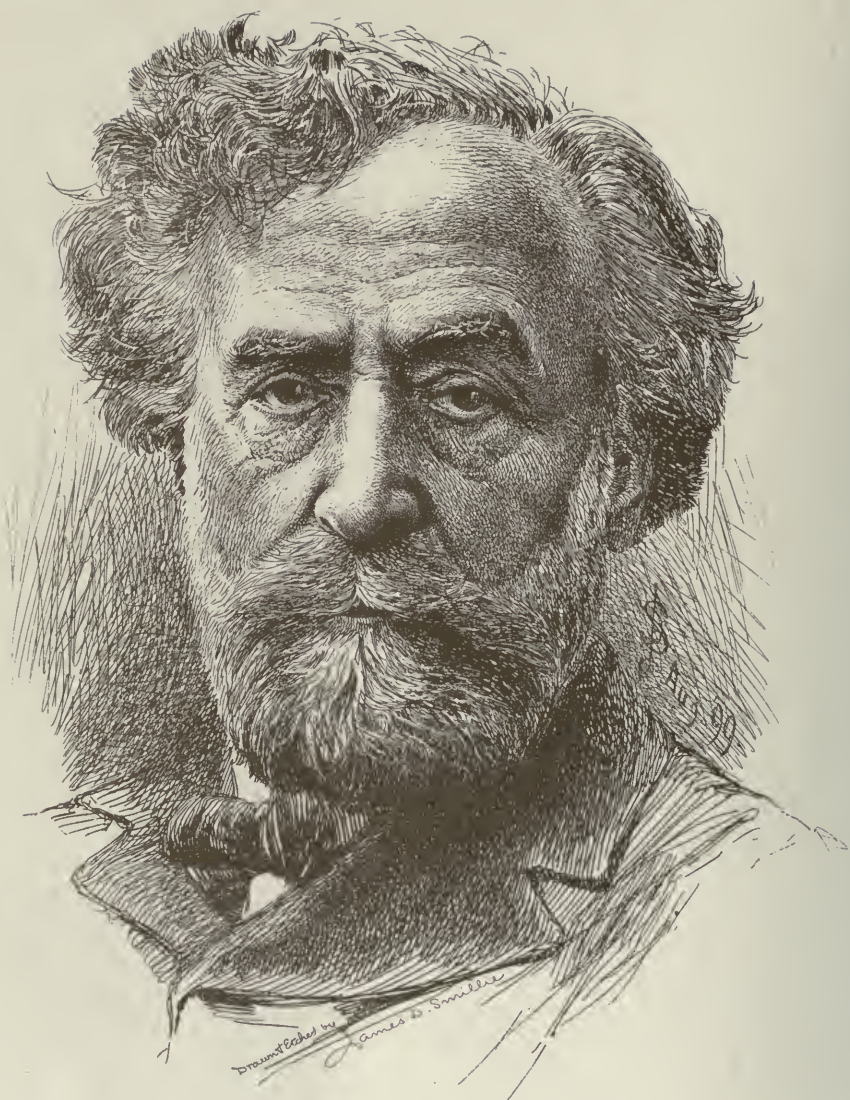
A life so clean, with service as its cue,
Such ceaseless effort for the sick, forlorn,
That tongue nor pen can give the homage due,
Save to thank God that such as he was born !

How many hearts have filled with grateful cheer
At words of hope that he alone could give.
How many times his skill has banished fear,
And taught some erring one the way to live.

A true physician, thinking naught of self,
His entire life a symphony of deeds,
Untouched by baser aims or greed of self,
His only aim to succor human needs.

And thus he stands, the Nestor of us all,
Beloved, admired, with every man his friend,
Long may it be before he hears the Call,
Far in the future may his Journey end.

H. EDWIN LEWIS.



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American Medicine

H. EDWIN LEWIS, M. D., *Managing Editor.*

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Health conservation is almost as important to the American people, it would seem, as the conservation of the country's forests, water power and mineral supplies. If there is any part of our national resources more vital to the welfare and progress of the nation than the health of the people, we do not know it. Until recently, however, one would never suspect from any attention given to health matters by our national legislators, that the health of the American people was of any importance whatsoever. It is true that the various State legislatures have been meeting many sanitary and medico-sociologic problems with a good deal of sound judgment and common sense, and doubtless the local disposal of many public health questions has made the national proposition less insistent.

The Pure Food and Drug Act focussed attention on the need of national legislation along specific lines, and straightway agitation for the development of a department of health began to make itself felt. Several organizations, notably the American Medical Association and the Committee of One Hundred of the American Association for the Advancement of Science took the matter up, and an active propaganda was soon under way. President Roosevelt's attitude, however, promptly threw cold water on the whole movement, for he expressed himself as being un-

equivocally opposed to the creation of a separate department of health. In a letter to the Committee of One Hundred, Mr. Roosevelt gave his reasons for opposing the department idea, and suggested as a substitute, grouping of all public health agencies under one head. Realizing the comparative futility of attempting to secure legislation for a department of health in the face of President Roosevelt's objections, everything was held in abeyance for a while. Both of the great political parties incorporated public health planks in their 1908 platforms and although that of the Republican Party was emasculated for some unknown reason, the promise of definite organization of all agencies under one head was plainly given by the politicians of both sides. President Taft came into office with great enthusiasm. Divers questions of great moment have engaged his attention. Opinions are somewhat divided as to the results he has been able to accomplish. Many are inclined to criticise the comparative lack of achievement, and it is perhaps true that the program as laid out by the President has been only partially completed as yet. But one thing is certain. President Taft himself has not been to blame. He has worked heroically to keep his pledges for constructive legislation, and if he has failed, or his plans have been deferred, the fault lies at the door of the politicians. The President has shown

himself a strong man, capable and courageous in every way. The country may rest secure in his honesty of purpose and the broad liberality of his viewpoint. His methods may lack sensationalism, and he may seem over judicial in his relation to many matters, but let us take the deepest possible satisfaction in the fact that he is safe, sane and thoroughly human. The nation was never in more dependable hands.

President Taft's attitude on public health questions is that of an intelligent, broadminded man who has from necessity as well as from inclination posted himself rather fully. This being so, there should be little or no doubt as to the position he will ultimately take on the proposition to create a national department of health. Senator Owen's bill places the matter fairly and squarely before Congress. If our national legislators will be as ready to ascertain the opinions of their constituents on this great problem as they were concerning the tariff, there can be little uncertainty as to the result. The American people—the thinking classes—are keen for a national department of health. To be sure, there is a well defined sentiment for economy in governmental expenditures, but every thoughtful person knows that a department of health will repay fourfold every dollar it costs. In fact, such a department will prove a substantial earning force almost from the beginning, and be able to swell the national revenues in an infinite variety of ways. Obviously the greatest returns from the utilization of governmental resources in the prevention and cure of disease will come from the saving in time, labor and expense. The resulting gain to the American people by the increase of human health, the saving and

prolonging of human life, and the general augmentation of human happiness may not be calculable in dollars and cents. But the gain will be none the less tangible, and the uplifting influence will be promptly shown on every phase of living.

The demand for the creation of a department with a secretary in the Cabinet, instead of the formation of a bureau to become an integral part of some already existing department, is well voiced by Senator Owen's bill. The importance of the health of the country is too great to have the details of its conservation prejudiced or handicapped as they assuredly would be by being restricted or confined to the activities of a bureau. With the evolution that public medicine, including modern sanitation, hygiene and food and drug matters, is already undergoing, a Secretary of Public Health is bound to be one of the most influential and useful officials in our system of government. This emphasizes the necessity that will arise—if the project goes through—of selecting such a secretary and his immediate assistants with the utmost care and wisdom. Officials connected with a national health department must necessarily have exceptional authority, with opportunities for the use as well as the abuse of power that will mean either unlimited good or far reaching harm.

Politics Must be Kept Out of a National Department of Health. It is bad enough for the other departments to be pawns on the chess board of national politics, even though following as high ideals as they unquestionably do. The health needs of the people are too sacred, and the problems presented are too intimately associated with the fundamental principles of Christian civilization to permit the slightest taint of selfish interest. The questions that will

necessarily arise in the execution of public health laws, requiring the nicest discrimination, the greatest moral courage, and above all the broadest humanity, emphasize the problem that will be presented to the President in organizing the personnel of such a department—if Senator Owen's bill becomes a law. Thank God, we have a President who appreciates scholarly attainments, but more than this, true manhood, as defined by personal integrity, individual resourcefulness, and the possession of high ideals. It is earnestly to be hoped therefore, that his keen appreciation of men will enable President Taft to avoid the greatest menace in the situation—the medical politician.

The medical politician is one of the most detestable creatures on earth. The one great factor that has delayed passage of a comprehensive national health law and the creation of a national department of health has been the selfish bickering of the medical politicians. Personal aggrandizement and self gain have been so patently the moving force in the past, that our wide awake congressmen have instantly grasped the situation and the whole question has been prejudiced and its urgency discounted proportionately. With apparent zeal and enthusiasm in humanity's behalf, year after year an appeal has been made to Congress; but with few exceptions the loudest and most strenuous advocates have been unable to hide their hypocrisy and selfishness, and the fundamental good of the proposition has, therefore, been obscured by the all too evident aims of the promoters. As a further drawback, active opposition has been constantly exerted by medical men whose positions and interests would be jeopardized by a change in the existing health laws. This opposition has been also

actuated by selfish interests, but in all fairness it must be admitted that it has been honest and not hypocritical in its expression. Finally, there have been countless other adverse influences directed against any proposed national health law by those whose interests were best served by secrecy, the absence of legal supervision, and the continued ignorance of the people.

So take it all in all, it is little wonder that American health matters have remained so long in a state of obsolescence. The situation until recently has been one of constant shame to the medical profession, shame that the active advocacy of the health laws favored by every earnest physician and honest citizen should have been left so exclusively with the "self seekers!"

The better organization of the profession has changed the old order of things completely, and the present demand for a department of health as voiced by Senator Owen's comprehensive bill is practically the demand of a united profession. The American Medical Association as it stands today with its state and county affiliations is one of the most powerful organizations and fundamentally one of the greatest forces for good in the country. It has crystallized the sentiment for pure food and drugs, and shown to the country—especially to the legislators—that the medical profession are earnest and sincere in their desire for a national department of health; that American physicians are heart and soul in favor of all legislation that will promote the public welfare; and that to the medical profession there is no interest so sacred as that of the health of our American people.

The great American Medical Association has its own dangers, most of them internal and the product of its phenomenal

growth. It would be too much to expect that the enormous increment of power thrust upon those directing its policies and activities should be entirely free from a modicum of errors and mistakes. Things have been done that are certainly open to grave criticism, but when one reviews the enormous work and progress of the past five years, and comprehends the unlimited power placed in the hands of a few men, the predominating sentiment is bound to be one of admiration. There may be—as has been said—inherent evils in the system of organization. There may and undoubtedly has been much abuse of power. But there has been progress and a professional uplift that means everything to the American physician. As we look, therefore, with just eyes on the actual achievements of the past few years we would stultify our sense of fairness if we failed to express a sincere note of appreciation. We are glad to see the criticisms that some of our contemporaries are making—though we do deplore the personalities and vituperation. But our knowledge of the ability and character of the American physician leaves no doubt in our minds as to the ultimate future of an organization which can already boast of over thirty thousand American doctors. It may have storms and strife galore, it may suffer from the sins of omission and commission of some of its officers, but as true as the needle to the pole, the great American Medical Association itself is going on to successes that are only limited by the needs of the American people. And not the least of its achievements will be the aid and impetus it will be able to give to the evolution of a national department of health.

The treatment of pneumonia has been discussed at length but at present the important and interesting experimental work being carried on in efforts to combat this infection by means of the injection of leucocytic extract, is occupying a prominent place in the field of progressive medicine.

The principle of the treatment is based upon the clinical fact that the presence of a large number of white cells in pneumonia is a good prognostic indication, that the leucocyte as a consequence plays a most important role in the resistance to the infection.

Since the action between tissue fluids containing antibacterial substances, and tissue cells, is the important detail in protection against any infection, the supremacy of one or the other in the process, depends upon the type of invading organism and its virulence. Unless the pneumonic infection is too overwhelming or virulent, the essential element in the progress of the disease is the leucocyte.

The fact that the pneumonia infection is not confined to the lungs but frequently invades the general circulation, led to the belief that it was a local manifestation of a general disease—and it was constantly observed that a stimulation of leucocytes always followed and continued with the progress of the lesion.

Believing that the phagocytic power of the white cells of pneumonia patients was less than that of the normal individual, Hiss extracted these substances, and used them in a diffusible form thus supplying material to the infected organism, which would aid its phagocytic action in protec-

tion against the poison elaborated by the bacteria.

Laboratory experimentation upon animals showed that susceptibility and immunity to pneumococcus infection were to be measured by the degree of phagocytic power of the white cells of the animal employed. Pneumococci from the blood of a pneumonia patient were injected intraperitoneally in animals by the Wright capillary pipette method. Since the peritoneal cavity of the animal exerts destructive power upon certain numbers of pneumococci, and the end results of a pneumococci inoculation depend upon the bactericidal and phagocytic power of the animal, it was found that the reaction produced a general peritonitis in a few hours, and, although phagocytosis was slight, the pneumococci gradually disappeared with no process suggesting lysis taking place. As a result of these intraperitoneal inoculations, it was found by Hiss and others that the severity of the disease was modified and that the lesions were more localized.

Only a small number of pneumonia cases in man is thus far spoken of by Floyd and Lucas (in the *Journal of Medical Research*)—in which the leucocytic extract was used. An aqueous extraction of leucocytes of rabbits, obtained from pleural excitation, was injected into the subcutaneous tissues of the buttocks, thigh, or back of the pneumonia patient with resulting improvement, especially as to the symptoms due to the toxemia; and with no immediate or subsequent harmful effects. In small children amounts ranging from 5 to 10 c.c. were used twice a day, while in severe cases 15 to 20 c.c. were injected three or four times in twenty-four hours. The effect depends upon the day of the disease that the serum is used. The mor-

tality is given as $12\frac{1}{5}\%$. Fatal cases were in young children with broncho-pneumonia, and in adults of advanced age or with cardiac complications.

Insufficient cases have been observed as yet, to determine final conclusions as to the therapeutic value of the leucocytic extract; but reports show that no harm resulted to the patient in any instance; that in many cases the disease was apparently shortened—with improvement in most of them; that in the severe cases recovery was hastened and the toxæmia diminished; and that in the entire series a lower mortality resulted.

Granted that this treatment may be inefficient owing to the need of more exact knowledge of the infection of pneumonia, and the workings of the organism in protective effort; it still seems to promise much which will be of decided therapeutic value. Among other important factors, it seems that the time of injection of the extract, and the dosage used will be considerations of no small consequence in the final deductions.

Certainly good results have been obtained and reports from more extended series of cases will undoubtedly show that much in the treatment of pneumonia infections can be done by the injection of the leucocytic extract.

The increasing cost of meat is bound to have consequences which physicians must anticipate, for to be forewarned is to be forearmed. We are interested in the causes because they show that the phenomenon is biologically inevitable and will continue for some time to come. The increasing amount of gold taken from mines makes that metal cheaper, so that the dollar buys less and less every year—but that

affects the prices of all things proportionately. The unit of exchange is merely becoming smaller. Nevertheless a greater increased production of some other things has reduced their price even measured by the smaller unit, but in the case of meat the amounts have not increased at the same rate as the demand. A short while ago when land was free, meat was produced in such amounts that the poorest laborer could afford it three times a day. The conditions attracted a flood of immigrants from lands so overcrowded that the vast proportion of the poor could not afford meat once a month, and the movement will continue until there is no attraction—that is, until it is as difficult to get meat here as it is in Europe. So we can expect the price of meat to rise until it is beyond the means of the poor and an occasional food for the middle classes.

The results of a non-meat diet are not necessarily bad, if there is plenty of nitrogen of other forms—fish, eggs, milk products, and the nitrogenous grains—so we need not worry over imaginary ills, but the trouble evidently will be the difficulty of getting even these foods. America has always been more or less free of the diseases of under-nutrition, which have afflicted the poor of Europe, but there now seems to be an end of this desirable state, and we must hereafter be on the lookout for them. Moreover our meat diet is generally recognized as causing a magnificent development of the native born children of immigrants who are undersized from underfeeding. The intellectual accomplishments of these new types have astounded the world, for they have far surpassed their ancestors. Our increasing density of population is therefore not an unmixed blessing, and we should moderate our enthusiasm over the

huge numbers' about to be accurately reported by the census. There are a few who maintain that such increase of population brings more harm than good and that it would be well for public health to keep down our numbers so that there would be enough meat to go round.

The movement to stop all immigration must be considered by physicians. Surely the medical facts elicited from the present investigations should help to decide the proper course. The phenomenon is just being discovered though it is very old. Perhaps we are on the verge of a change in our national diet in which meat forms a decreasing part. Already we are talking of importing both meat and wheat as we may not produce enough for home consumption—let alone exportation. This will do no harm—we will merely pay foreign farmers for food instead of our own. Yet, there does not seem to be any doubt that we are on the way to a crowded condition in which there will be as much undernutrition as in Europe and as little meat in the dietaries—whether for good or ill remains to be seen. The effect upon school children must be studied, and a determination made as to whether the percentage of defectives will increase.

The spread of tuberculosis in the best climates is being unjustly laid to the doors of the sanitariums therein established, for it has been proved over and over again that such an institution almost invariably causes a great reduction in the morbidity and mortality of the surrounding population, by reason of the educational effect in methods of prevention and cure. There have been disquieting reports of the ap-

pearance of tuberculosis at places advertised as climatically curative, as for instance among the Mexicans of the southwest and American families in mountain resorts of the east, but in every case as far as we know the sanitariums have nothing to do with it. Patients go to the place not for skilled treatment but for the climate solely. They take board and bed with poor families whom they promptly infect through criminal carelessness. Sanitariums prevent this very thing. Perhaps we too can prevent this new disaster from becoming worse, by emphasizing the limitations of climate and the vital necessity of skilled management. Patients must be warned not to expect a cure from climate alone, indeed they should be told that they might get worse if not under proper care and that in the meantime they might carry the infection to others. The whole wretched business shows that we have all been deceived as to the preventive value of certain climates, for there are increasing reports of cases originating where we thought it impossible. Indeed, there is a beginning suspicion that the very abnormal conditions of these places may even reduce one's resistance.

The danger of nursing the tuberculous in sanitariums has heretofore been considered so slight as to be negligible, indeed one of the commonplace remarks in defense of these institutions is to the effect that they are the safest places in the world on account of the great care exercised to destroy all bacilli escaping from the patients. As usual with all such unqualified medical opinions, a very false impression has been conveyed, for we have recently learned of two female nurses who have contracted pulmonary tuberculosis in a sanitarium sit-

uated in a climate which has been widely advertised as God's own for the cure and prevention of the disease. With everything in their favor as to climate and hygiene they have been infected by their patients, and their sad plight conveys the lesson that there is great danger from contact with any infection. It was only a few years ago that we thought typhoid a very safe disease to nurse, but we are now appalled at the enormous number of contact cases and have reversed our teaching to the end that nurses be guarded with extreme precautions. Similarly, though to a less extent of course, we must warn all those in contact with the tuberculous. Perhaps the two cases we mention had become reckless from the proverbial contempt of dangers daily encountered, or have been grossly careless, but even so they show that the occupation is not as safe as we believed.

The post-office fight against quacks seems to be progressing with commendable industry. Every now and then we hear of some of them being refused the use of the mails, so that in time it may be difficult to swindle sick people this way. At the same time, it makes one heart-sick to think of the low level of intelligence of the victims, which makes this form of crime possible. Child-like faith in advertised remedies seems born in us and exposure of the frauds has no effect whatever on most people. They run to the next as eagerly as to the last. The only thing to do is to protect the poor fools like the children they are. A paternal government seems destined to be our fate and our boasted democracy a sham. We wonder whether it will ever be possible to exclude fraudulent

medical advertisements from the lay press. The best papers have succeeded, but the vast majority are in a deplorable condition.

The successful use of trypsin and amyl-opsin in round celled sarcoma is reported by Capt. F. W. Lambelle, R. A. M. C., in the March number of the *Journal of the Royal Army Medical Corps*. The case was that of a man in whom the tumor recurred after operation and became so extensive as to prevent further interference. The enzymes were then tried with the remarkable result of sloughing of the masses and an apparent cure in a few months. The case is remarkable in view of the practically unanimous professional verdict in America that this form of treatment is powerless. It is quite evident that the whole matter must now be reopened for even if one in a hundred are cured it is well worth while. A spontaneous cure may have occurred but it is so unlikely that we must give credence to the case, particularly as the result followed the treatment so promptly.

The increasing consumption of sugar is at last receiving the attention of physiologists in many parts of the world, and the general opinion seems to be favorable to this change in habits because it is economical to relieve the digestive apparatus of part of its labor of digesting starches. The change has been so recent that there is not yet time to tell what harm if any can result. The possible atrophy of the tissues, which produce the starch-hydrating enzymes need not worry us. Indeed it would not be disastrous if we entirely lost our power to digest starch, for sugar pro-

duction is quickly becoming amply sufficient to replace the starches, though of course such a change in physique is not a matter for a day, but a slow change requiring millenniums. Nevertheless, there is a danger which has already been recognized. When starches are eaten, the sugar is slowly produced and always exists in very weak solutions, but when sugar is eaten, particularly the absorbable varieties, it is apt to be in strong solution more or less harmful. Very strong solutions of all the sugars seem to be used in nature as well as in our kitchens, as antiseptics to preserve other foods, for they are very injurious to living tissue. It is now said that sugar eaters suffer unduly from inflammations of the intestinal tract and liver. We have called attention to this fact before, and it seems important enough to repeat, now that sugar diet is receiving high praise which will doubtless lead many to indulge unduly.

The false reasoning of anti-vivisectionists is well illustrated in a letter published by S. W. Cleghorn in the January *American Magazine*. There is the usual false assumption that animals experimented upon are in continual severe suffering in the subsequent diseases or conditions produced, but the chief statement is to the effect that while vivisection may be useful, it is cruel and though it may help turn us out strong and healthy, exercise and sanitation would do it better. This opinion calmly ignores the fact that almost every bit of sanitation is based on prior experiments broadly classed as vivisection, and it unconsciously concedes their necessity. To stop them now, means that there shall be no future advances in sanitation and that the problems of prevention and cure shall re-

main unsolved, though every physician knows we are on the eve of grand discoveries in many lines. It is amazing then to find it stated that this god-like work of prevention of disease, suffering or premature death, "seems rather a hindrance than a help towards turning us out good Christians, or even ladies and gentlemen." The incident shows the utter impossibility of debate with such minds and the certainty that they will continue their dreadful propaganda for they have "fixed ideas" which prevent seeing the facts. The research workers might as well organize to combat what will prove to be a permanent opposition, and plans for perpetual defense might as well be supplemented by plans of counter attack to show the unreliability of each anti-vivisectionist.

The overcrowding of the medical profession comes up for discussion every little while, and always will come up, for it is the normal condition in all callings. Economists have repeatedly shown that industries owe their existence to a large unemployed class from whom labor can be obtained at a moment's notice. In the parable, the Master said, "why stand ye here, all the day idle?" There are always more workmen than the work requires and the cry of overcrowding is as old as man and is now heard every year in every trade. In every civilized land we find some doctors in poverty, some lawyers, and some clergymen. It is a condition which cannot be remedied and the proposition to reduce the number of medical students is palpably absurd—almost amounts to the suggestion that the sick be compelled to submit to the ministrations of the least efficient. The number of students is being reduced in England on ac-

count of the increasing cost and labor of obtaining a license, but it will not guarantee all the graduates success. Indeed overcrowding is socially desirable, as it increases the struggle for efficiency. In the struggle for existence, success goes to the efficient, not necessarily to those we consider the best. The diminishing incomes of physicians have already been mentioned in these columns, and the causes determined, but that has nothing to do with the utter failure of some,—a matter due solely to the inevitable overcrowding.

There is always room at the top, and this fact was dinned into our ears in childhood. Nevertheless the exceptional men are the only ones who get there. Moreover by the ordinary laws of mathematics and biology, it has long been proved that the further from the average the fewer are the specimens, consequently but few men are possessed of that efficiency which is a compound of ability, knowledge and energy.

It was dreadful teaching we received in childhood when we were told that every one had an equal chance to reach the top if he would only learn and work hard. The cup of disappointment is very bitter when failure follows. The very ability itself is compounded of intellectual power and a curious "personal magnetism" which impresses the patient—a native characteristic which no one can acquire though he may copy fairly well. Consequently there will always be failures, and the overcrowding may be beneficent after all—hard as that sounds.

Ignoring the unwritten law is a final development for which we should be pro-

foundly grateful. The old medieval system presumed that woman was a fool who could be led off by any man who came along, and that she was blameless. A few men have that opinion yet and go around shooting up the community promiscuously when any woman goes wrong. Why in the world they do not shoot her is hard to tell, for as a matter of fact she often lures and the man follows. It seems to most people that such females are not worth fighting over. Modern civilization is freeing women from many of the old restrictions and makes her a responsible agent and she can no longer expect to be saved and her guilty partner slaughtered. Then again, the decision as to who shall die, is in the hands of society and the man who assumes that function must be removed to where he cannot do it again—prison or asylum it makes no difference which. One thing is certain, the medical profession must do its share in ending the present carnival of murder in America. One county in Alabama is said to have more murders a year than all the British Islands together, and the rest of "God's country" is almost as bad. The idea of freedom seems to be the right to kill whom we please. If every apprehended murderer is deprived of life or liberty, as in England, the carnival would promptly end. The good work has begun,—let it go on.

Ignoring the alienists is the punishment meted out as a result of their habit of disagreeing. In two notorious trials recently, the expert witnesses swore to diametrically opposite opinions, and in each case the jurymen are reported to have ignored this testimony and formed their own opinions from the evidence as to facts,

as it is their right and duty under such circumstances. In other words, psychiatry, which as a science is now highly developed, can furnish no aid to society in dispensing justice,—a deplorable state of affairs which needs correction in every State of the Union. It is strange that the people themselves do not insist upon a new system, for they must know that no one is safe if it is possible to free every murderer who has money. Society must protect itself and its component units more than it has been doing in the past. Perhaps if all juries will ignore the experts, the reform will come sooner.

The indigestion of travelers is a serious matter which demands renewed attention. A common news item is the fact that some prominent man visiting from home, is prostrated by ptomaine poisoning. It is quite evident that there is not sufficient care in preserving the foods in public eating places, here and there, and that the local health authorities are inefficient or repressed by the fear of publicity. It would be well to keep a scrap book of clippings of such cases in order to avoid the places should chance take us that way. Incidentally we might suggest that all eating places be put under daily inspection. Hotel proprietors would do a great stroke of advertising by arranging their kitchens as show places, so that visitors might be impressed by the cleanliness and care of the foods. People now know much more of pure foods than they did a few years ago and are getting so "finicky" as to getting sick, that they may avoid hotels whose kitchens are in some unspeakable dark dungeon, or where flies are fed more industriously than the guests.

ORIGINAL ARTICLES.

INTRODUCTION.

SOME REMARKS ON THE HISTORY AND OCCURRENCE OF PNEU- MONIA, WITH BRIEF STATIS- TICAL DATA.

BY

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There can be no doubt that pneumonia has been known since earliest times. The writings of the ancient physicians from Hippocrates down bear witness to the fact that this disease is as old as civilization itself. Among the laity, it has likewise long been a recognized affliction, and as the dreaded "lung fever," it has been looked upon since time immemorial as one of mankind's most fearful curses.

Lack of space forbids any lengthy discussion of the history of pneumonia, although it would well pay anyone to delve into the bygone literature of the subject and study the interesting evolution of opinion concerning pathology and treatment.

According to Musser and Norris, the relation between the clinical manifestation of pneumonia and consolidation of the lungs was first pointed out by Morgagni; while Baillie first described the process as "hepatization." Subsequent studies of great importance were made by Laennec, Cruveilhier and Rokitansky. The actual diagnosis of pneumonia by determining its physical signs was first described by Auenbrugger and Laennec, while to Rokitansky belongs the credit of first differentiating between lobar and lobular types.

Occurrence: Pneumonia is world-wide in its occurrence. The people of some countries seem rather less prone to the ravages of this disease—notably those near the equator—but none escape it entirely. Emigration seems to rob individuals of any immunity they may have established in their native climes, and in the country of their adoption they often become much more susceptible. This opens up a most interesting line of thought concerning bacterial virulence and there can be little doubt that the pneumococcus is an organism particularly subject to environal modification. This fact taken into consideration with the great variability of human susceptibility makes it extremely difficult to establish any fixed data as to the occurrence of pneumonia. The factors of the equation presented by bacterial virulence and human susceptibility are so subject to modification that the most we can do is to study percentages and realize that such figures at best give us but approximate truths.

All available statistics point to the fact that pneumonia is increasing. Especially does this seem to be so in certain localities, as for instance in Chicago. During the last forty years the mortality from pneumonia has increased from 4.4 to 19.95 per 10,000 inhabitants:

The last U. S. Census shows that pneumonia next to tuberculosis is responsible for a larger number of deaths each year than any other disease. While the mortality of tuberculosis seems to be decreasing, pneumonia goes steadily onward, and probably the day is not far distant when pneumonia will head the list of causes of death. There are not a few physicians who question the foregoing and attribute the increase of pneumonia deaths to errors of diagnosis, but there are abundant reasons

for believing that the diagnosis of pulmonary diseases and the registration of deaths are far more accurate to-day than formerly.

The increase in pneumonia deaths may rightly be considered, therefore, as a reliable index of the spread of this disease that Osler aptly terms the "Captain of the Men of Death."

As a matter of statistical interest the following tables have been selected from the latest edition of Osler's *System of Medicine*, (1909).

THE OCCURRENCE BY MONTHS.

The records collected by Wells of 685,566 fatal cases show:

Month.	Cases.	Per cent.
January	83,151	12.1
February	86,090	12.5
March	89,062	13.0
April	89,263	13.0
May	67,028	9.9
June	38,861	5.7
July	26,059	3.8
August	24,811	3.6
September	27,183	4.0
October	38,111	5.7
November	50,260	7.3
December	65,667	9.6

PNEUMONIA IN ITS RELATION TO AGE.

Among 32,681 cases:

Age.	Cases.	Per cent.
0 to 5 years.....	1,249	3.8
5 to 10 years.....	3,132	9.6
10 to 20 years.....	5,107	15.6
20 to 30 years.....	8,041	24.6
30 to 40 years.....	5,665	17.3
40 to 50 years.....	3,987	12.2
50 to 60 years.....	2,558	7.8
60 to 70 years.....	1,754	5.4
Over 70	1,094	3.3
The age was not stated....	94	0.3

PNEUMONIA IN ITS RELATION TO SEX.

Of 12,098 cases collected by the writers, 8,881, or 73.41 per cent., occurred in males and 3,217, or 26.59 per cent., in females. The various relations of incidence to sex and age are shown in the following tables:

MALES.			
Age.	Cases.	Per cent.	
0 to 5 years.....	35	0.39	
5 to 10 years.....	57	0.64	
10 to 20 years.....	2,197	24.74	
20 to 30 years.....	2,912	32.79	
30 to 40 years.....	1,582	17.81	
40 to 50 years.....	1,117	12.58	
50 to 60 years.....	593	6.68	
60 to 70 years.....	310	3.49	
Over 70	78	0.88	
	8,881		

FEMALES.			
Age.	Cases.	Per cent.	
0 to 5 years.....	22	0.68	
5 to 10 years.....	37	1.15	
10 to 20 years.....	456	14.18	
20 to 30 years.....	853	26.51	
30 to 40 years.....	542	16.85	
40 to 50 years.....	425	13.21	
50 to 60 years.....	403	12.53	
60 to 70 years.....	319	9.92	
Over 70	160	4.97	
	3,217		

PNEUMONIA IN ITS RELATION TO OCCUPATION.

The influence of occupation upon the frequency of pneumonia is shown by the mortality statistics of the United States census, 1900.

PERCENTAGE OF ALL DEATHS DUE TO PNEUMONIA.

	Males.	Whites.	Negroes.
Professional	8.7	11.8	
Clerical and official	9.2	6.6	
Mercantile and trading.....	9.4	13.5	
Public entertainment	9.9	18.7	
Personal service, police and military	9.9	11.9	
Laboring and servant	11.8	11.7	
Manufacturing and mechanical industries	9.8	10.2	
Agricultural, transportation, and other outdoor	10.7	13.8	
All others	8.3	12.5	
Females.			
Musicians and music teachers..	5.2		
School teachers	7.4	8.8	
Stenographers and typewriters..	6.0		
Bookkeepers, clerks, copyists...	13.0		
Hotel and boarding-house keepers	5.0	4.	
Laundresses	10.3	8.1	
Nurses and midwives	10.1	9.4	
Males.			
Servants	9.5	8.3	
Cigar makers and tobacco workers	12.2		

Mill and factory operatives—textiles	9.8	6.0
Milliners	5.6	5.2
Dressmakers and seamstresses..	8.0	7.2
Telegraph operators	8.6	
All others	9.5	8.8

THE DAY OF CRISIS.

Among 10,159 cases of pneumonia collected by the writers, the disease terminated by crisis in 5,397, or 53.1 per cent. The day of the disease upon which crisis occurred was as follows in 4,718 cases:

Day of Crisis.	Number.	Percentage.
First	1	0.02
Second	27	0.6
Third	183	3.8
Fourth	265	5.5
Fifth	760	15.9
Sixth	681	14.2
Seventh	1,042	21.7
Eighth	629	13.1
Ninth	505	10.5
Tenth	250	5.2
Eleventh	179	3.7
Twelfth	63	1.3
Thirteenth	70	1.4
Fourteenth	17	0.3
Fifteenth	21	0.4
Sixteenth	15	0.3
Seventeenth	10	0.2

Of 5,201 crises, 3,050, or 58.6 per cent. occurred on the odd days and 2,151, or 41.4 percent., occurred on the even days.

THE DAY OF DEATH.

The following tabulation shows the day of the disease upon which death occurred in 2,613 collected cases:

Day of Death.	Number.	Per cent.
First	6	0.23
Second	60	2.30
Third	95	3.64
Fourth	124	4.75
Fifth	189	7.23
Sixth	209	8.00
Seventh	230	8.80
Eighth	225	8.61
Ninth	206	7.88
Tenth	175	6.70
Eleventh	125	4.78
Twelfth	93	3.56
Thirteenth	60	2.30
Fourteenth	82	3.14
Fifteenth	53	2.03
Sixteenth	41	1.57
Seventeenth	41	1.57
Eighteenth	33	1.26

Nineteenth	37	1.42
Twentieth	25	0.96
Twenty-first	59	2.26
Later	445	17.03

One thing is certain and that is that few diseases are of greater importance to the general practitioner than pneumonia. The unexpected character of its attack, its insidious onset, its rapid placing of a patient, no matter how stalwart, in a state of gravest peril, and the uncertainty of the prognosis until the crisis is well passed, all serve to make pneumonia a disease of the most serious possible character. Such a scourge that robs us gluttonly of our young and old, weak and strong, rich and poor needs our best thought and study. Mankind cannot remain supine much longer and allow this fearful disease to go on taking annually its unwarranted toll.

It was with the earnest belief that every bit of thought given to the question of pneumonia has a potential if not an active value, and may sometime lead, when least expected, to the ultimate solution of this great medical problem, that this symposium was arranged.

Such an array of opinions and ideas—and from the sources represented—cannot fail to prove of incalculable value to the general practitioner. It is the last word on pneumonia—and if, aside from the facts and ideas it outlines for practical use, it serves ever so little to stimulate further investigation of this at present blot on the medical escutcheon, the time and effort expended in its compilation will be well repaid.

Vomiting of Pregnancy is frequently easily controlled by administering one minim of tincture of iodine in an ounce of water, repeated every two hours.

THE DIFFERENTIAL DIAGNOSIS OF LOBAR PNEUMONIA.

BY

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INTRODUCTORY.

The symptom-complex constituting lobar pneumonia is quite characteristic; the recognition of the affection—provided the case has been under observation from the onset—is hardly ever attended by any difficulty. Occasional delay in arriving at a conclusive diagnosis may ensue in such instances of the disease which have not been under medical supervision from the start and do not give a thoroughly reliable history; however, on the hand of the physical signs together with the special objective phenomena chancing to be present at the time, a positive diagnosis will soon be established in the overwhelming majority of the cases.

The fact, furthermore, must not be lost sight of that the classical syndrome of lobar pneumonia is not always present in its entirety. One or the other of the typical local or general symptoms or physical signs may be illy developed or be absent altogether; in one-fifth of the cases the initial rigor has never occurred; the pain, depending almost entirely upon the degree of associated pleural involvement, may be a negligible factor when the process is a deep-seated one; a mild temperature elevation may be out of proportion to the severity of the case; even the characteristic pulse-respiration ratio may be entirely wanting. The physical signs may fail if the pneumonic process has not progressed towards the periphery of the lung, if there prevails an additional intrathoracic disease or if there exists a much thickened pleura.

Certain cases of pneumonia are apt to be mistaken for one or the other pathological condition which is not localized in the thoracic cavity. This may especially occur with typhoid fever and meningitis.

Symptoms analogous to those of the typhoid state—dry tongue, rapid pulse, feeble heart action, diarrhea, great weakness, etc.—may prevail in protracted cases of lobar pneumonia. If a case has not been under observation prior to the occurrence of this condition, which is known as typhoid pneumonia, it may be at times a difficult task to ascertain its real character. If in such a case a careful physical examination does not point to the lung as the seat of the affection the application of the Widal test will clear the diagnosis in well-nigh every instance. Again, there occur cases of typhoid fever—pneumo typhoid—the inaugural symptoms of which more or less resemble those of lobar pneumonia. The positive Widal reaction points to typhoid fever as does the characteristic eruption which usually appears on or about the eighth day.

In children particularly, lobar pneumonia may be mistaken for meningitis. A careful physical examination, however, will often demonstrate the presence of pneumonia. Cytologic study of the spinal fluid may determine the occurrence of meningitis. Convulsions may occur in pneumonia as well as in meningitis; in small children, however, pneumonia is frequently ushered in with a convulsion while this commonly ensues somewhat later in meningitis. Headache in pneumonia is frontal, in meningitis it is occipital and accompanied by painful retractions of the muscles of the neck. Absence of Kernig's sign in pneumonia, non-occurrence of a crisis in meningitis, and the presence of the characteristic pulse-re-

spiratory phenomenon will assist in making the differential diagnosis.

In the presence of chronic alcoholism violent mental manifestations may entirely overshadow the local condition. On the hand of the physical signs and the objective symptoms a conclusive diagnosis of lobar pneumonia should be established within a few hours after its onset in the chronic drunkard. Again, an acute pneumonic process, remaining often unrecognized, is frequently the terminal affection of many a chronic disease; the association of fever and cough superimposed upon a chronic glycosuric, nephritic or cardiopathic state should invariably prompt a thorough examination of the lungs. The differential diagnosis between the manifestations of the chronic and those of the acute complicating process is possible in a goodly proportion of the cases.

The differential diagnosis of lobar pneumonia is almost entirely confined to the latter's differentiation from other acute diseases of the lungs or from those of the pleura during the course of which there ensues pulmonary dullness. A study of the differential diagnosis of lobar pneumonia should therefore comprise not only diseases like acute pneumonic phthisis, broncho-pneumonia, pleurisy with effusion and hemorrhagic infarct, but also affections of possibly less acuity, as hydrothorax, pneumothorax, atelectasis and hypostatic pneumonia, which are characterized by dullness most frequently elicited over the lower lung portions. In the following the various diseases are analyzed on the hand of their physical signs and symptomatology.

INSPECTION, MENSURATION.

Lobar Pneumonia. Intercostal spaces usually remain unchanged; more or less

diminished movement on affected side; increased expansive motions of chest on sound side; pulsation of diseased lung apt to give rise to distinct movement of chest wall; little or no increase in volume of affected side.

Acute Pneumonic Phthisis. Rapid respiratory movements; nothing pathognomonic.

Acute Pleurisy with Effusion. Intercostal spaces obliterated or bulging on affected side; increase of circumference noticeable in many cases; respiratory sluggishness in diseased area; in effusion of right side displacement of apex beat to left, in effusion of left side displacement to the right or obliteration.

Broncho-Pneumonia. Nothing characteristic.

Hemorrhagic Infarct. Nothing characteristic.

Hydrothorax. Intercostal spaces never bulging; usually no thoracic enlargement.

Pneumothorax. Conspicuous enlargement and immobility of affected side; intercostal spaces distended and bulging; apex beat obliterated in affection of left side, displaced to left in affection of right side; patient lies on affected side.

Atelectasis. During inspiration often retraction over affected area.

Hypostatic Pneumonia. Nothing characteristic.

PALPATION.

Lobar Pneumonia. Vocal fremitus generally increased over area of dullness; pressure sensitiveness of intercostal spaces on affected side.

Acute Pneumonic Phthisis. Occasionally bronchial fremitus; vocal fremitus decreased when accompanied by pleurisy.

Acute Pleurisy with Effusion. Vocal fremitus over area of dullness decreased or abolished; when pulmonary and costal pleura are connected by adhesions vocal fremitus may be obtained.

Broncho-Pneumonia. Impaired expansion; increased tactile fremitus over larger consolidated areas.

Hemorrhagic Infarct. Pressure sensitiveness over area of dullness; vocal fremitus may be increased.

Hydrothorax. Vocal fremitus over area of dullness decreased or absent.

Pneumothorax. Vocal fremitus absent over area of dullness, decreased above the latter.

Atelectasis. Tactile fremitus generally decreased.

Hypostatic Pneumonia. Vocal fremitus increased over area of dullness.

PERCUSSION.

Lobar Pneumonia. Stage of engorgement: Percussion note generally higher pitched, often tympanitic. Stage of hepatization: Percussion note dull, ranging from sound of more or less tympanitic timbre to decided flatness; dullness has not character of wooden flatness of effusion; sense of resistance not so great as in pleurisy with effusion. Stage of resolution: Dullness subsides; percussion note at first somewhat tympanitic, may remain higher pitched over affected side for some time.

Acute Pneumonic Phthisis. Impaired percussion note or dullness as a rule; in some cases hyper-resonance.

Acute Pleurisy with Effusion. Dullness over accumulated effusion; its degree depends upon amount of effusion and displacement of lung from costal pleura; dullness begins over posterior and inferior portions of lung and ascends in accordance with increase of effusion. Effusions amounting to less than 300 cc. are not demonstrable by percussion. Intensity of dullness and sense of resistance when percussing increased downwardly; limit of dullness higher in sitting than in recumbent posture; when effusion is copious crackle-pot sound may be educed below clavicle; if pleural cavity is partly filled with exudation line of dullness changes when occupying different position.

Broncho-Pneumonia. Small, circumscribed areas of dullness, often bilateral; dul-

ness not marked and often demonstrable by slight percussion only; often it is diffuse exhibiting some tympanitic quality, especially over lower lobes.

Hemorrhagic Infarct. Circumscribed dullness of slight intensity, mostly over lower lobe and unilateral.

Hydrothorax. Dullness over accumulated liquid, mostly bilateral; line of dullness ascends and descends during respiration; when unilateral dullness is usually elicited over right side.

Pneumothorax. Percussion note deep and full or flat tympanitic in some cases, in others dull; dullness over effusion at base changing outline with postural change of patient; movable dullness more readily elicited than in pleurisy.

Atelectasis. Irregular, not sharply circumscribed area of dullness when condition is extensive, tympanitic sound when incomplete or slight; postural change of patient and deep inspiration cause disappearance of dullness or tympany.

Hypostatic Pneumonia. At onset abbreviated percussion note with tympanitic timbre behind, below or lateral; later dullness, absolute below, gradually clearing upwards.

AUSCULTATION.

Lobar Pneumonia. Stage of engorgement: Weak respiratory sounds in affected part, exaggerated breathing over healthy portions; occasionally broncho-vesicular sounds on full inspiration; at end of deep inspiration fine crepitant râle. Stage of hepatization: When dullness is marked low-pitched bronchial or tubular breathing, heard first with expiration; crepitant râle at end of inspiration best audible at beginning of consolidation; subcrepitant râles are due to accompanying bronchitis; tubular breathing absent in certain cases of massive pneumonia; occasional friction-sounds. Stage of resolution: Subcrepitant râles audible on inspiration and expiration, coarser râles over bronchi; broncho-vesicular breathing followed by normal respiratory sounds.—Auscultation of voice elicits normal transmission (bronchophony), occasionally in-

creased transmission (pectoriloquy), rarely bleating character (egophony).

Acute Pneumonic Phthisis. Sibilant and coarse or small, fine, crepitant, dry or moist râles; in children occasionally high-pitched tubular breathing at bases of lung.

Acute Pleurisy with Effusion. Weakened vesicular breathing in presence of slight effusion; breathing sounds inaudible in presence of considerable effusion; distinct bronchial breathing, best audible near spine when lung is compressed and layer of exudate between lung and chest-wall is moderate; bronchial breathing, in contradistinction to pneumonia, least audible over area of marked dulness, i. e. at base of effusion. Leathery friction rub at onset of affection prior to accumulation of effusion, later frequently over upper level of exudate.—Vocal resonance diminished or absent; occasionally egophony; whispered voice transmitted through serous, not through purulent exudate (Bacelli's sign).

Broncho-Pneumonia. Over areas of dulness, fine, subcrepitant râles, often bilateral; respiratory murmur bronchial or broncho-vesicular; also manifestations of bronchiolitis.—Bronchophony over larger areas of dulness.

Hemorrhagic Infarct. Bronchial breathing, moist râles; occasionally pleuritic friction.

Hydrothorax. Respiratory murmur over dulness weakened or absent, occasionally bronchial between scapulae; friction sounds only when complicated with pleurisy.—Vocal resonance sometimes egophonic over boundary line of dulness.

Pneumothorax. Respiratory murmur over diseased side weakened or absent; amphoric breathing in presence of open pneumothorax, exaggerated breath-sounds on healthy side; metallic quality of râles; metallic tinkling on coughing or deep inspiration. Hippocratic succussion elicited in most cases (production of metallic splashing sound by shaking patient's body); coin sound characteristic of condition.

Atelectasis. When incomplete, vesicular murmur diminished or absent; when involved area is large, bronchial respiration;

subcrepitant râles on deep inspiration.—Bronchophony as a rule.

Hypostatic Pneumonia. At onset diminished vesicular murmur low posteriorly; fine vesicular râles, bronchial respiration and frequently tinkling râles when dulness increases.

CONCURRING DISPLACEMENT OF HEART AND LIVER.

Lobar Pneumonia. No or no marked displacement of either organ.

Acute Pneumonic Phthisis. No displacement of either organ unless accompanied by pleurisy with effusion.

Acute Pleurisy with Effusion. When exudate is on right side heart is displaced to left, liver, especially right lobe, downward so that it is readily palpable; when exudate is on left side heart is displaced to right.

Broncho-Pneumonia. No displacement of either organ.

Hemorrhagic Infarct. No displacement of either organ.

Hydrothorax. No cardiac displacement in bilateral hydrothorax; liver frequently displaced downward.

Pneumothorax. When left side is affected ordinarily absence of dulness in normal cardiac area, especially when patient is in recumbent position; spleen dislocated downward; in disease of right side heart pushed toward left, liver downward.

Atelectasis. No displacement of either organ.

Hypostatic Pneumonia. No displacement of either organ.

TEMPERATURE.

Lobar Pneumonia. Sudden initial chill, temperature rising to 104 deg. or 105 deg. F. in 8 to 12 hours; assumes then continued form, nocturnal remissions of 1 deg. or more; in weakened persons, advanced age, alcoholism lower average temperature. During pseudo crisis marked temperature decline followed by renewed elevation; crisis usually between 5th and 11th day,

temperature falling during night; post-critical temperature often subnormal.

Acute Pneumonic Phthisis. Rapidly rises to 104 deg. or 105 deg. F.; continued type, or soon remittent or hectic with night-sweats. Onset in other cases with repeated chills, followed by high and irregular fever; no crisis.

Acute Pleurisy with Effusion. Rises slowly to 101.5 deg. to 103 deg. F.; after from 1 to 3 weeks declines by lysis, never by crisis; in most acute cases assumes continued character; surface temperature 1 to 2 degrees higher on affected than on healthy side.

Broncho-Pneumonia. Abrupt or gradual increase to 102 deg. to 104 deg. F.; fever irregular, in severe cases continued; declines by lysis.

Hemorrhagic Infarct. Chills and fever frequently at onset; no temperature elevation later on, as a rule; increase or continuation of initial fever due to septic processes.

Hydrothorax. Usually no elevation.

Pneumothorax. Depending upon primary disease; at onset often subnormal; increases when exudate is produced.

Atelectasis. Dependent upon primary disease.

Hypostatic Pneumonia. No characteristic temperature range; depending entirely upon primary disease.

PULSE.

Lobar Pneumonia. Pulse-rate 100 to 116 per minute in moderately severe cases; greater frequency denotes danger; at first small, later full and bounding; rarely dicrotic; with extensive consolidation pulse may be small and rapid; in old and weak patients may be small and frequent from outset.

Acute Pneumonic Phthisis. During first week frequently as in lobar pneumonia; later small and rapid.

Acute Pleurisy with Effusion. Pulse-rate 100 or more per minute; volume and

tension reduced; occasionally irregularity of rhythm.

Broncho-Pneumonia. Pulse-rate very frequent; compressible; in later stages often extremely rapid, feeble and arrhythmic.

Hemorrhagic Infarct. Small and frequent.

Hydrothorax. Feeble.

Pneumothorax. Small, compressible, accelerated.

Atelectasis. Small, feeble, accelerated.

Hypostatic Pneumonia. Small, accelerated.

SPUTUM.

Lobar Pneumonia. At first scanty, colorless and frothy, soon attains characteristic rusty or prune juice color; viscid and very tenacious, difficult to eject by patient; adherent to receptacle; more profuse, also purulent, easier expelled at period of crisis; may be absent in children and old people. Contains often fibrin clots; microscopically consists of red and white blood cells, mucous and pus corpuscles, bronchial and alveolar epithelium, blood pigment, small cell casts of alveoli, fibrinous casts of bronchioles; of microorganisms, pneumococcus generally, micrococcus lanceolatus and influenza bacillus occasionally present.

Acute Pneumonic Phthisis. At first mucoid, then rusty-colored; later more abundant, muco-purulent, greenish or bluish-yellow; contains tubercle bacilli and shreds of yellow elastic tissue.

Acute Pleurisy with Effusion. Frequently no expectoration; mucous excretion during process of resorption; if abundant generally due to concurring bronchitis or pulmonary tuberculosis.

Broncho-Pneumonia. Glairy and tenacious mucus ordinarily, occasionally muco-purulent and rather turbid; in adults may be blood-tinged; never rusty.

Hemorrhagic Infarct. Bloody, dark-colored, mucoid expectoration appearing suddenly.

Hydrothorax. Only in presence of complications.

Pneumothorax. Character of expectoration dependent upon primary disease (tuberculosis, gangrene, abscess, etc.).

Atelectasis. Dependent upon primary disease.

Hypostatic Pneumonia. Mucoid, mucopurulent or, on account of complications, reddish-brown, or frothy and reddish, or bloody.

SUBJECTIVE SYMPTOMS.

Lobar Pneumonia. Sharp *pain* in affected side soon after initial chill lasting two to three days; commonly referred to region of nipple or axilla, occasionally to abdomen when appendicitis may be suspected; cough or deep inspiration aggravating it; absent in old people and in central pneumonia. Patient lies generally on healthy side.

Cough frequent, short, repressed, associated with increased pain; may be absent in old people and alcoholics.

Dyspnea nearly always present; respirations in adults from 40 to 60, in children from 60 to 100 per minute, shallow, brief inspiration as well as expiration; expiration often attended by audible grunt.

Headache occurs early, may be present throughout.

Acute Pneumonic Phthisis. *Pain* in side.

Dyspnea supervenes early; respiration may soon be very labored.

Cough invariably present; aggravates pain.

Acute Pleurisy with Effusion. *Pain* usually sets in with febrile state; may not occur until some hours after onset of affection; is sharp, lancinating or dragging, aggravated by cough; its intensity no positive indication of severity of affection; commonly referred to nipple or axillary regions, not infrequently to abdomen or low down in back; diminishes as effusion appears; at start patient lies upon healthy side, later upon affected side.

Cough occurs early; not as frequent or distressing as in pneumonia; may be absent in certain cases; increased during resorption of exudate.

Dyspnea most pronounced when effusion develops rapidly; breathing frequent and

shallow; when effusion accumulates slowly dyspnea may be absent except on exertion.

Broncho-Pneumonia. *Pain* in affected side, gradual onset.

Cough hard, distressing, often painful, accompanied by expectoration.

Dyspnea constant and progressive; respiration rises to 50 or even 80 per minute.

Hemorrhagic Infarct. Sudden appearance of lancinating *pain* in one side.

Dyspnea supervenes with pain or even earlier; extremely distressing; struggle at breathing; mental anxiety.

Sudden spells of *cough*.

Hydrothorax. *Pain* absent.

Dyspnea marked and constant, often orthopnea; asthmatic attacks.

Cough irritative, invariably present at some period.

Pneumothorax. *Pain* agonizing, appears suddenly at site of collected air in pleural sac; high degree of oppression.

Dyspnea extreme, often attended by feeling of impending suffocation; frequent respirations.

Atelectasis. Nothing characteristic.

Hypostatic Pneumonia. No definite *pain*; oppression and sense of compression in thorax.

Impaired respiration.

DURATION.

Lobar Pneumonia. Without complications generally not longer than eleven days.

Acute Pneumonic Phthisis. Usually terminates fatally in from two to six weeks; some cases not before third month.

Acute Pleurisy with Effusion. Longer than pneumonia; febrile period one to three weeks; stage of absorption widely varying duration.

Broncho-Pneumonia. Considerable variation; fatal cases two to three weeks or less; cases recovering after from six to eight weeks, occasionally one to three weeks only.

Hemorrhagic Infarct. Generally very brief, terminating lethally; at other times dependent upon resulting processes.

Hydrothorax. Depends upon character of primary disorder.

Pneumothorax. Depends mostly upon cause; tuberculous cases generally die within few weeks, occasionally even within first day; recovery at widely varying periods; chronic condition may continue for three or four years.

Atelectasis. Very uncertain.

Hypostatic Pneumonia. Depends upon character of associated condition.

ETIOLOGICAL DATA.

Lobar Pneumonia. Primary form "colds" and infection (mostly micrococcus lanceolatus of Fränkel); traumatism; more frequent in males; alcoholism predisposes. Secondary form in typhoid fever, influenza, measles.

Acute Pneumonic Phthisis. Rapid infection; secondary form following localized pulmonary tuberculosis, tuberculosis of pleura, peritoneum or any other organ; much more frequently in males.

Acute Pleurisy with Effusion. Primary form exposure to cold or wet; traumatism; primary tuberculosis of pleura. Secondary form (the most frequent) pulmonary tuberculosis; pneumonia; pulmonary abscess or gangrene; affections of osseous structures of thorax; diseases of mediastinum, bronchial glands, esophagus, abdominal viscera, metabolism.

Broncho-Pneumonia. Primary form (mostly in adults) same causes as of pneumonia. Secondary form (the most frequent) following or associated with measles, scarlet fever, influenza, whooping-cough, diphtheria, tuberculosis; aspiration (deglutition) pneumonia.

Hemorrhagic Infarct. Result of stasis in presence of feeble circulation in pulmonary capillaries; thrombus in right heart (dilatation); mitral disease; venous thrombosis.

Hydrothorax. Manifestations of general dropsy in diseases of heart, lungs, liver, kidney and in marasmatic conditions.

Pneumothorax. Tuberculosis; bronchitis; empyema; malignant disease or ab-

scence of esophagus; malignant or ulcerative disease of stomach or colon; bronchiectasis; perforating chest lesions.

Atelectasis. Compression of lungs by pleural or pericardial effusion; hydro- or pneumothorax; tumors, aneurysm of arch; paralysis of pneumogastric; paralysis of chest walls; thoracic deformities; marasmatic conditions.

Hypostatic Pneumonia. Constant recumbent or lateral posture in presence of cardiac weakness due to febrile affections; marasmus; bone fractures (old people).

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THE SYMPTOMATOLOGY, COMPLICATIONS AND PROGNOSIS OF PNEUMONIA IN CHILDREN.¹

BY

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In considering the symptomatology of pneumonia in children we must differentiate between the two principal clinical varieties of these affections, namely, lobar and broncho-pneumonia. Lobar pneumonia, is, according to our modern view, a general infection with localization of the inflammatory process in the lung tissue, whereas broncho-pneumonia is usually the extension of an inflammatory process from the upper respiratory tract into the bronchioles, alveoli, and adjacent tissues. In accordance with this difference in the pathological anatomy of the two diseases we find a distinct difference in the symptomatology.

The onset of lobar pneumonia in children is sudden as in adults. The disease is commonly at this period of life ushered in by high fever, vomiting, cyanosis or convulsions. The pathognomonic chill of the adult is replaced in children by cyanosis or convulsions. Within a short time of the onset we find a change in the pulse

¹ Read before the Eastern Medical Society.

respiration ratio, which gives us the first indication of pulmonary involvement. Normally this ratio is about 1 to 4, that is 1 respiratory movement to 4 pulse beats, whereas in pneumonia this ratio becomes changed to 1 to 3 or even to 1 to 2, so that with a pulse of 150, we may have respirations of 50 to 75. The temperature is as a rule of a continuous type running from 103 to 106 F. With this is usually associated the movement of the alae nasi, with respirations, and the well-known and characteristic expiratory grunt. One who is accustomed to see lobar pneumonia in adults, in which the condition can be often readily recognized at a glance, will not infrequently overlook this affection in children, on account of the absence of dyspnoea and cough in not a few of the cases. The difficulty is enhanced by the late appearance of the physical signs. The time when these signs become demonstrable depends chiefly on the original site of the lesion, whether peripheral or central. In the peripheral pneumonia we can usually detect changes in the chest within 24 to 36 hours from the onset, whereas in a centrally located pneumonia signs of consolidation may not make their appearance before 3 to 5 days, or even longer. The earliest change is usually in the auscultation. The puerile breathing over the affected part becomes diminished or lost and the respiratory murmur is faint. The next change is in the voice and at this stage is the most characteristic and almost pathognomonic sign. When a child cries, coughs or is made to say moo, its name, the usual 99 or 1, 2, 3; you will detect a distinct increase in the vocal fremitus and also a change in its quality, that is, it acquires a nasal quality, the so-called bronchophony. The breathing soon loses its vesicular character and becomes bronchial

in type. On percussion we at first elicit a hyperresonant note which soon becomes dull. If the consolidation is in the neighborhood of a large bronchus, we obtain on percussion a tympanitic note, the so-called Skodaic resonance. Fine crepitant rales are usually heard over the area of consolidation, but are by no means as frequent or constant as in the adult. Promptness in the early detection of these signs, demands frequent and careful examinations of the chest and especially of certain regions, where these signs usually make their earliest appearance. These areas are the supra and inclavicular regions, upper axillae, and the bases of the lungs. It is important to recognize the existence in the child of certain normal variations in the physical signs of the chest, which might confuse the physician in his examination. In not a few children the auscultatory murmur over the right apex possesses normally a broncho-vesicular type. Posteriorly over the right base we often find a distinct dullness due to the situation of the liver and also to the overlapping of the middle and lower lobes of the lung. To diagnose the existence of pulmonary consolidation in these regions we must not only have dullness or change in auscultatory signs, but also change in the voice or the existence of fine crepitant rales. The usual duration of the fever is five to nine days and as in the adult falls by crisis, in the majority of the cases. However in some children we observe a pseudocrisis or the so-called pre-critical drop. It is assumed that this first drop in the temperature is due to the formation of almost sufficient antitoxin in the blood, and the subsequent rise in temperature during the next day, represents formation of new toxins, which the body readily overcomes by renewed production

of antitoxin, and thus the true crisis is brought about. The blood in lobar pneumonia in contradistinction to that of typhoid shows a well marked leucocytosis of the polynuclear type. This is present almost from the onset and lasts until after the crisis. The average white blood count is about 32,000 the lowest being about 20,000. The highest 56,000. It is usually more marked where more than one lobe is involved, but bears no relationship to the temperature.

Complications. The complications of lobar pneumonia are quite frequent and play an important role in the prognosis of the disease. They are attributable either to the action of the pneumococcus and its toxins on various organs and tissues of the body, or to the secondary invasion of other organisms. The most frequent and important complication of lobar pneumonia at this period of life is empyema. It is almost always due to the invasion of the pleura by the pneumococcus. This usually takes place by means of the lymphatics. Even if at first the fluid is not purulent, it soon assumes that character, if the pneumococcus itself is present in the pleural cavity. Our experience at the Mt. Sinai Hospital in Dr. Koplik's wards has been, that if the fluid withdrawn from the pleural cavity, though clear, showed the pneumococcus, invariably empyema developed within a short time. Although the usual site of the accumulation of pus is at the base we should not forget the occasional occurrence of interlobular, sacculated, and apical empyema. In these regions the diagnosis is not so readily made, and if suspected we should not hesitate to introduce an exploratory needle. Aside from the well known physical signs, this complication should be suspected, if after the crisis

there is a gradual rise of temperature, accompanied by pallor, sweats, and nonappearance of the expected convalescence. In apical and central pneumonias, there is often present a serous meningitis, giving such marked symptoms on the part of the central nervous system, that the erroneous diagnosis of a purulent meningitis is made in the beginning. This condition has been called meningism, but is in reality a serous meningitis, the result of the action of the pneumococcus toxins on the central nervous system and the meninges. When the pneumococcus itself invades the nervous system, then we have a purulent pneumococcus meningitis, which is a much rarer and more fatal complication. Otitis media is frequently seen, and is equally as frequently not seen because of lack of examination of the ears. Other complications which have been observed are too well known to merit extended consideration. Some of these are gastro-enteritis, pneumococcus peritonitis, nephritis, endocarditis, pericarditis, arthritis, mastoiditis, parotitis, etc.

Prognosis. As a rule lobar pneumonia in children terminates in complete recovery. Fatal cases are seen during the first year of life and in older children in the presence of such complications as empyema, mastoiditis, meningitis, pericarditis, and peritonitis. The previous condition of the patient plays an important role. In uncomplicated cases the mortality is usually from 5 to 8%. A high temperature associated with a high leucocyte count and high percentage of polynuclears is a favorable prognostic sign. Marked prostration, cyanosis and dyspnoea, extensive lung involvement, and a low leucocyte count render the prognosis unfavorable, but even in the apparently most hopeless cases, recovery may take place.

Broncho-Pneumonia. Broncho-pneumonia is usually secondary to the acute infectious diseases, or to acute diseases of the upper respiratory tract. Being secondary, the clinical course is much less definite than that of lobar pneumonia and its onset and duration more variable. In most of the cases the onset of broncho-pneumonia is preceded by a bronchitis. When the inflammation extends into the bronchioles and alveoli, the first symptoms of broncho-pneumonia appear. These are, rise in temperature, increased respiration, dyspnoea and rapid pulse. In addition to the signs of bronchitis we now discover the presence of fine rales scattered over various areas of the chest, mostly over both infrascapular regions. The extent of lung involvement is very variable. In some cases we find no other physical signs than that of bronchitis. In others we have in addition smaller or larger areas of dulness with bronchovesicular or bronchial breathing and bronchial voice. In extensive involvement of many contiguous lobules the signs may closely resemble those of lobar pneumonia. In other cases, only signs of diffuse bronchitis are present throughout the entire course of the disease and we are here only enabled to diagnose the existence of a broncho-pneumonia by the general condition and symptoms. The usual duration is from one to three weeks, but may be considerably longer. Relapses are seen frequently and the termination is usually by lysis. A polynuclear leucocytosis is present here as in lobar pneumonia, the average is about 34,000, the maximum being 73,000, and the minimum 13,000. While lobar pneumonia is frequently seen in the adult, broncho-pneumonia is much more common in infants and children.

Complications. The complications of broncho-pneumonia are chiefly due to the local extension of the inflammation. Empyema is not as frequently seen as in lobar pneumonia. Interstitial pneumonia, pulmonary and lymph node tuberculosis are not frequent sequelae of this affection.

Prognosis. Broncho-pneumonia is a much graver disease than lobar pneumonia, as it usually affects infants and children whose resistance has been lowered by previous disease. The mortality varies from 10 to 30%. In young infants it is very often fatal. Extensive pulmonary involvement, prostration, marked dyspnoea, and cyanosis are very unfavorable signs.

Although these two diseases have been considered together tonight, they are in reality two distinct affections. Distinct in their pathogenesis, pathological anatomy and clinical course. In fact their only relationship is, that they both involve the lung tissue.

We may express the hope that future bacteriological studies will enable us to place their classification on a firmer basis than is possible at present.

DISCUSSION.

Dr. William P. Northrup said, I have regretted very much that I could not hear the first and all of Dr. Heiman's paper. I was lost in darkest Brooklyn until quite late in the afternoon and I had to have dinner and I got here as early as I could. I have been sort of an understudy of Dr. Hymanson. He gets the pneumonia case first and the consultation fee and I come in when he cannot be found, so incidentally we have seen quite a number of cases this winter together and ripping bad ones. I am sorry his paper could not be discussed with the other because some features interested me very, very much.

It was very obvious to me as Dr. Heiman's paper was going on that we are thinking of different ages of children. Do we mean a child a year old or one three years old or five when Dr. Heiman speaks of the voice sounds, of 1, 2, 3, and moo? The patient I think of is not old enough to say moo or 1, 2, 3. So when we discuss

pneumonia in children we must limit ourselves to a more or less definite age. I am thinking of infants under two years. None of them could say moo, especially when they have pneumonia. They are too sick and too stupid.

I was thinking of the definition of pneumonia and the things I was going to say Dr. Berg stole away from me.

Dr. Freeman and I have been seeing the same cases and we think in harmony. I read between the lines that he is thinking of the kind of cases we see at the Foundling Hospital and at the Presbyterian, and that he also sees at the Nursery and Childs. They are young children, too young to say moo. If they will only keep still and not scream we are thankful.

What is our definition of pneumonia? In my student days when I was working in the laboratory with Drs. Delafield and Prudden, it was the great question, and it seems funny today, whether pneumonia was a local disease with constitutional symptoms or constitutional with a local lesion. What is pneumonia as we see it in children? It seems that there is a bacteremia, an infection, and whatever the cause of the so-called pneumonia, the infecting agent is certainly in the child. We can have pneumonia in the ear, in the precordium or in the heel.

It seems to me in discussing complications, that empyema is not the most common complication with us. It is commoner in older children especially if not well nourished. I have seen very few empyemas at Presbyterian Hospital but the common complication was in the ear. I have had installed in my observation ward a fifty candle power electric light that they can wheel around to the bed, and every ear must be looked at if the patient has any fever or obscure temperature. There is almost an epidemic of ear trouble. A large number of them have otitis media. It does not go on to mastoid trouble. The ear is the primary complication with me. Dr. Heiman mentioned the intestinal complication. I will take empyema every time for mine rather than a bad gastro-entero-colitis. It is a most, discouraging and dreadful complication. The whole bottom drops out of our case when it has a bad diarrhea. It is more and more my way of thinking that it is a bacteremia. It seems more analogous to tubercular meningitis, this dissemination of the lesion by the blood stream to different parts. I am thinking again of children under two years. I believe Dr. Heiman is thinking of older children when he speaks of the diagnosis, prognosis, etc. The temperature chart, Dr. Heiman says, drops in the case of lobar pneumonia by crisis and in bronchopneumonia by lysis. I see many charts that look like sepsis. It is a bacteremia whose toxins give rise to an irregular chart. I learn a great many things from my house staff, though we do not always admit it. The house physicians coming from the adult services find temperatures of pneumonia in children that look like typhoids and sepsis, etc., until they learn more about them.

I don't think so much of the hardening of the muscles. If we have a sore spot anywhere, we are careful of it, but beyond that, I fail to see that the prognosis is any different.

I have been at this job twenty-nine years and I don't care about the apex part. The opisthotonos part Dr. Berg took away from me. The best picture I ever got was a child which stood on his heels and head and he died and had only enterocolitis and marasmus, nothing else.

There are quite a number of very essential things in the prognosis, diagnosis and treatment which are to be thought of especially in the young child which is two years old. To me, the essential and characteristic chart of pneumonia begins when the parenchyma of the lung is involved. A child out in the park with light clothing catches cold in the head, larynx and trachea. So far it is catarrhal inflammation of the larger bronchi which gives fever and cough, but it is not until he has parenchymatous pneumonitis that he begins to have that dopy look, continuous fever and rales of the fine kind heard at the base. It is on these that I prefer to rest the diagnosis in infancy, on the sudden onset and on the fever which gives that dopy prostration. Most of the women would tell you the child began at four o'clock to be dopy. He had a red spot in the face and began to be sick. The disproportionate respiration pulse ratio is because the pneumonia toxins stimulate the respiratory center out of proportion to the pulse center. I think that is the essential feature of it and one of the valuable features. After that the rales.

In summing up. *The sudden onset.* The mother will name the quarter of the day when the child was taken sick. It was sick, dopy, and had a fever. The father was photographing the child at twelve o'clock and it was gay and a good subject for photographing and at two o'clock it waked and was cranky, couldn't do anything with it, began to be sick and ran a straight pneumonia.

When the pulse respiration ratio departs. I think O'Dwyer was the one to emphasize this and I like to think when it departs from the ratio of one to four and approximates one to three, the chances are that the disturbance is in the pulmonary tissues, that the lesion is there.

I heard a paper read mentioning a large percentage of cases of pneumonia that had before the development of characteristic pneumonia, ear symptoms. I don't recall how he verified them, whether by looking at the drum or by opening or what.

Blood count and prognosis. In these young children the blood count wobbles around most atrociously. The worst case I ever put out in the sun because it was the last resort for a desperate case, we shovelled away the snow so there was a bank on all sides and we stuck him out there. We said everything is against him, he can hardly keep enough air in his lungs to keep him from being purple. The minute he is anywhere indoors, he is restless and

toxic and his leucocytes were away down out of sight and my freshly arrived house physician said, "He is gone sure. I have never seen a child that had such a low leucocyte count get well." I said, "Now don't you forget that. You can think again and if they are way down, give up all hope." I rubbed it into his back, front and face. I said, "Write it down. Put it into history and sign your name." The child got well so quick, it was really a brilliant recovery.

Blood count. Our men are hungry to count blood. We have men to count all the blood and keep at it. We keep them busy at it but really it does not help a lot in children. I think children are the funniest things in the world anyhow. They don't do anything they ought to but they have a way of living. When the house physician comes down, I show him a sick child, one of the worst, and say, "Are we to put him on the danger list?" He has him already on the danger list. I see that as I go in. I ask, "When the friends arrived and asked how many chances he had, what did you tell them?" "I told them he was not quite in." I then say, "Tell them when they come again that they couldn't kill him if they tried. You write that down on a little piece of paper."

There are three important things to know a lot of things about. First, summer diarrhea which is incurable. Second, pneumonia, they get well anyhow. Third, obstruction of the bowel and that is my black pest.

It is perfectly obvious from all that has been said that we cannot tuck a nickle in the slot and get a diagnosis of pneumonia in infants right away. I have been very much interested in the three classical papers. The figures of Dr. Hymanson were interesting.

Dr. Freeman's observations of the pneumonia as a general comprehensive proposition I fully endorse. We have worked in the same dead house and have seen the same cases. Dr. Heiman's paper is valuable in the extreme. It does not quite cover the same age. He begins after two years. I want him to say if that is not so. We have these three valuable classical papers. I hope they will be published.

Dr. Louis Fischer said, I will speak on the treatment which is almost as important as making a diagnosis. Considering the papers we have had so far, I think the subject and the symptomatology and diagnosis have been pretty thoroughly covered. There is no use of rehashing.

One word about pneumonia and that is in making the diagnosis of pneumonia in children, we should get away from the text-book symptoms, that is, I am usually asked, "Is it not a fact that pneumonia begins with cough and consolidation and bronchial breathing and dullness on percussion, etc?" As a matter of fact in the large number of cases seen by me, children do not cough in the very beginning. It is a symptom which comes on later in the disease. The early symptoms are high fever, disturbance of the normal pulse ratio and coated tongue, etc., which would make us

believe we are dealing with gastrointestinal indigestion, commonly called spoiled stomach. If dealing with persistent fever after castor oil and rhubarb and soda have been administered and the diet corrected and the fever persists, if throat and ears have been properly inspected and there is nothing to be found, I usually suspect a limited pneumonic process, called a central pneumonia. These are the cases which baffle us early in the disease and it will take two to three days until the diagnosis can be made positively.

In the course of the discussion I said if we have meningeal symptoms and no distinct symptoms of consolidation, it is not unwise to do a puncture because it is a very simple procedure and will help in diagnosis. I have had no less than seventeen cases of cerebrospinal meningitis in children under one year and it was only this last fall that a baby seven weeks old was brought to my service with vomiting and fever for a number of days. I did a puncture which plus the bacteriological findings gave the diagnosis.

An examination of the lung should always be made whether or not the gastric symptoms of an acute infection are present. I make it a routine practice in seeing cases for the first time to invariably go over the thorax. I think it is as important as taking the temperature, because very frequently when we least expect to find a pneumonia, we will find it.

The wandering type of pneumonia is another thing which is very disagreeable. During the present winter I have seen a number of cases of persistent fever of an acute lobar pneumonia and there it was simply a question of an extension from one lobe to another. It was the wandering type. In one case there were three distinct lobar infections in one child which simply took one month to attain its final issue. The temperature came to a crisis, there was a reinfection, a temperature rise to 104 which again persisted for six to seven days and the crisis was followed by a third rise in temperature and again its crisis.

In blood examinations, the leucocyte count is not a very important aid to me in the diagnosis of the obscure fever after pneumonia. I refer to that which has a pseudo-crisis following a normal crisis and suddenly there is a rise in temperature to 101 to 102 and this temperature going up or down which will give the suspicion of a complication. We look after the ears, try to exclude otitis media, palpate the mastoid, then we must not forget the kidneys as a possible source of infection and even in young children I try to get the urine examination at least once. The possibility of the diminution of chlorides is a very valuable aid in the diagnosis of pneumonia. The chlorides are diminished in pneumonia. It is important to examine the blood and I usually watch to see how the leucocytosis behaves. If I see the polynuclear percentage rise and the leucocytosis quite high, 23,000 to 25,000, this with polynuclears 73, 74 or 80, I look for a dull area and if I get any distant breathing and flatness or dullness on percussion, I put my needle in and

try to find pus. During the past week I have seen three empyemas and two of these were fatal. This very winter there has been quite an amount of empyemas.

One more word, which is very important. The treatment of lobar pneumonia. I believe in oxygenating the lungs. It is our duty. As pneumonia is a communicable disease, we should exclude all useless outsiders. I am not in accord with people who teach that cold winds or south winds are very valuable for very frail and pneumonic children with subnormal vitality. I individually should say I cannot expose a child who is cyanotic in a room filled with cold air. I have seen so many fatal cases following such exposure that I desire to go on record against it. I would not do it with my own child. The effect of such exposure is fatal. When children have been coddled with blankets, etc., one must individualize.

Dr. Walter Lester Carr said, Dr. Freeman made a valuable point in connection with the etiology of pneumonia in well-to-do children as commonly having its origin in influenza infection. I think that is the most ordinary source of the disease of this type. With reference to some of the clinical varieties it is very important that we should realize that a great many men who are good observers and diagnosticians fail to determine pneumonia in an infant or very young child. A common condition is that attention is paid to minor matters with neglect of the lungs, that is, a baby with diarrhea will be treated for diarrhea without examination of the lungs. A case of this kind came under my notice where a very good physician had been treating the patient.

The irregularity of the appearance of symptoms of pneumonia associated with influenza would have to be considered in making the examination, and sometimes these are very acute in their onset; for example, a little boy I saw ten days ago in Brooklyn. This boy had measles, the temperature was normal ten days and ran to 104.5, he had very acute pain and examination of lung showed one area of pneumonia with pleurisy no larger than the stethoscope.

These conditions may be associated with the continued infection of influenza where it is supposed to be cured. A baby I saw today with a physician uptown, 2½ years old, where influenza began just before Christmas with the very mild type of inflammation of the throat, had a slight discharge from one ear. It was supposed after that that the patient was all right. We found pneumonia at the base of each lung.

Another case I saw last winter was that of an Italian physician who had made all arrangements for an operation on his own child in which there was pneumonia at the base.

Some cases simulate typhoid. It is only by blood examinations and examinations of the lung that a mistake is avoided.

A leucocyte count is sometimes useless to go by. I saw a case in Jersey last month where a health officer examined a boy, found a Widal,

a leucocyte count of 52,000, and, on the strength of the findings, said it was a very severe case of typhoid complicated with some suppuration. The amount of pneumonia was not great. It was the right axilla and in about four days, the boy was perfectly well. So I think all these conditions and associations of pneumonia in childhood should be thought of, and great mistakes may come from failure to examine and reexamine the lung.

The lung in the older children is easily examined but in younger children the condition is easily overlooked.

Dr. Thomas S. Southworth said, I would emphasize the importance of the management rather than the treatment of pneumonia. The treatment is very much overdone. I am inclined to think that a good many of the fatalities are due to excessive treatment and excessive cardiac stimulation.

Of the important things in the management of pneumonia the first is fresh air. I am surprised that Dr. Northrup would talk so long without saying more about fresh air. It is most important where the child is breathing 30 to 50 to the minute, shut up in a close room where the oxygen is removed by the patient's breathing, the lamps and sympathetic friends. I do not believe in exposing broncho-pneumonia cases to cold air but I believe in giving lobar cases cold as well as fresh air and fresh air always to the broncho-pneumonia cases.

An important thing is the food. In the initial stages of any acute infectious disease, digestion is at a low ebb. The food should be cut down and ordinary articles should be cut out and milk should be the diet, not only milk alone but the milk should be diluted. Abdominal distension is one of the serious embarrassments and that can be prevented by proper management of the diet. It embarrasses the heart and the lungs. It should be prevented and not treated.

The third thing is to secure comfort, rest and sleep. Comfort by bathing, comfort by environment. Bathing is also useful for the temperature. Don't sweat the child which has a temperature of 103.4. Allow the child to rest between the treatments some. One has noticed a nurse pattering around the room with all the lights turned on. Secure sleep by drugs if necessary and when we wish a child to sleep, be sure that the room is dark. It is almost impossible for anyone to sleep with a bright glaring light and this fact should be considered more with children than adults.

I have not said anything about treatment as such. I should reserve stimulation toward the end of a pneumonic process. Almost every hospital interne whom I have come in contact with is anxious to put every pneumonia case as soon as it occurs upon some sort of treatment—usually cardiac stimulation. My success in treatment of pneumonia is directly in proportion to my ability to restrain the staff. Don't thrash a tired horse if we want to make a successful journey. The management of

pneumonia is in aiding Nature and the chief aids are easily absorbed food, comfort, rest and sleep and the minimum of medication.

Dr. Henry W. Berg said, a thought occurred to me as I was coming to the meeting tonight that it was almost a presumption for us who are treating children and adults to come here and talk to you or pretend to lecture to you on a subject like pneumonia. I see many members of this association and pneumonia is the one disease which I find is rarely overlooked by the average east side practitioner. They know pneumonias because everyone is likely to lose his clientele if he does not diagnose pneumonia. The clientele is not likely to be satisfied.

What is the use of talking to you about symptoms which are not auscultatory, which cannot be heard? Everyone expects when we talk about pneumonia that we will tell exactly where it is. I remember a case in Fifth street. I suspected pneumonia in one boy who had a temperature. I went over the lung from top to bottom three times a day and couldn't find a sign of the pneumonia. I told the mother and father that we were dealing with a pneumonia according to all the symptoms, the 1 to 3 ratio, the child's voice, etc., but the physical signs were not there. I had Jacobi in consultation and he couldn't find the pneumonia. During the next seven days it was almost a crucifixion to go in there and not locate the pneumonia. The diagnosing of pneumonia consists in simply training the ear to recognize certain physical signs. One of the best pathologists in New York expressed the wish that some day this disease would be known as pneumonitis. Clinically there is no disease which looks so badly as pneumonia and yet there is no disease which has a better prognosis. It has made many successful physicians in New York. It is a disease which looks horrible and yet the crisis occurs and the physician gets the credit. Broncho-pneumonia is more of an insidious disease. I would rather have a child with a lobar pneumonia and a temperature of 105 than a child with a broncho-pneumonia and a temperature of 101 and going on and on and liable to end in tuberculosis.

In lobar pneumonia the disease is limited to one lobe or to one lung. We will not hear a mass of rales all over one side of the chest, not even in all parts of the same lung. They will be limited to one lobe or to one lung.

Secondly, we will find that these lobar pneumonias in the early stage are accompanied by a peculiar grunting breathing. When we enter the room we can tell a lobar pneumonia by the breathing. We cannot do this in broncho-pneumonia. A broncho-pneumonia sits up and plays with toys, a lobar pneumonia never does this. A peculiar flush, the peculiar characteristic drop of crisis, these are characteristic and distinctive things. A presence of a primary disease to which broncho-pneumonia is secondary is important in broncho-pneumonia. If we are called in to see a broncho-pneumonia, and the child has a discharging nostril, take a culture

and we will find probably the Klebs-Loeffler bacillus. That child has diphtheria and has infected the lungs and has diphtheritic broncho-pneumonia. If one is not familiar with the sound of breathing over the lung in the presence of a diphtheritic membrane in the larynx, one might say this child has lobar pneumonia over the left lung. What we really hear is bronchial breathing due to transmission of the bronchial breathing from the larynx down the bronchi and into the lung.

In lobar pneumonia cases the prognosis is favorable, and in broncho-pneumonia cases the prognosis is unfavorable and in 70% of cases, we will get recovery and in 30% of cases death. It is important to give a favorable prognosis in lobar pneumonia and an unfavorable prognosis in broncho-pneumonia.

Summing up by **Dr. Helman**. I want to thank Dr. Northrup for calling my attention to the ages. I really had more reference to older children.

In reference to the pneumococcus occurring in the ear and when occurring in the lung, we call it pneumonia and in the joint, arthritis, we have the same condition of affairs in rheumatism, if it occurs in muscle tissue we call it rheumatism, if in the tonsil, we call it tonsillitis.

In children up to one year, if the blood count is 15,000 to 20,000, it is still considered normal. In those cases where we have a low white blood count, we must also make a differential count.

In order to get a valuable chloride of sodium estimate in children, we should have a twenty-four hour specimen, and to obtain that in children is extremely difficult.

The real pneumonia occurring in typhoid also gives a low blood count.

Dr. Southworth mentioned the fact that cardiac stimulants are abused. I am very glad he mentioned this. We should not over treat the patients in this particular disease.

The abdominal distension is often due to the toxins due to paralysis of the gut and these are the most difficult cases and almost always fatal.

SURGICAL HINTS.

Persons who have had an arthritis or iritis in the course of gonorrhea are liable to suffer from the same complications during subsequent attacks.

In cases of relapsing epididymitis, even in the absence of a discharge, examination of the prostate should never be omitted.

Urethrotomy should be avoided, if possible, in cases of existing renal disease, so that routine examination of the urine for albumen and casts is a wise precaution before performance of this operation.

PNEUMONIA IN CHILDREN.

BY

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A physician in the active practice of his profession cannot long disregard the subject of pneumonia in children. This is true in part because the disease as it occurs in the immature differs in many particulars from the disease as it occurs in adult life. A disregard of these differences must inevitably lead one into serious error while upon the other hand an appreciation of them will add much to the skill with which the disease is handled.

General appreciation of the finer points of the disease as it occurs during adult life is everywhere evident but not so much can be said in regard to a general knowledge of the disease in childhood, therefore, I feel justified in subserving possible completeness to a consideration of the more practical points of difference in the disease as it occurs in adults or in those of more tender years. Conciseness demands that only such differences as are of practical value be considered.

Frequency. One of the most interesting questions and one which seems to puzzle the majority of practitioners is that of the relative frequency of lobar and broncho-pneumonia. It has been my common experience that lobar pneumonia is considered by a large proportion of men in general

practice as uncommon in young children and that attitude toward the disease has frequently led to its being overlooked.

There can be no question but that broncho-pneumonia is very common during the earlier and later periods of life and that after the fourth year of life it becomes *comparatively* an uncommon disease. But this fact should not lead us to the supposition that because a broncho-pneumonia is common during this early period of life that lobar pneumonia must be rare.

Several factors may have contributed to this view and undoubtedly one of the most important has been the infrequency with which the disease is seen post-mortem. The low mortality in children, of course, is mainly accountable for this but in addition there is the fact that when a young child dies it is almost invariably from some complication of the disease and the process in the lung has cleared up.

And, again, broncho-pneumonia is very frequently a fatal complication of lobar pneumonia in children and when death occurs the original process (lobar) has disappeared.

The difficulty has also evidently arisen through an inattention to frequent and thorough examination, to misinterpretation of the physical signs or to both.

But even disregarding these latter factors, a study of the literature would strongly indicate that results in the study of the relative frequency vary at different times and in different places and that no two groups of cases would show similar results.

My experience has been that at least thirty per cent. of all the pneumonias of infancy are of the lobar type.

My object, however, is to again emphasize the fact that lobar pneumonia is not

a disease uncommon to the early period of life.

The Course of the two types of pneumonia in children differs greatly. Lobar pneumonia continues with persistent high temperature and the local phenomena remaining quite constantly the same until the time of the crisis which usually occurs between the third and seventh days. The drop in the temperature at the crisis may be only temporary, however, and it may again reach its acme within twenty-four hours after the fall, but the recurrence is for a few hours only.

No such course may be expected in broncho-pneumonia; there is persistency of temperature punctuated with an irregularity marking apparent periods of improvement and retrogression and this is continued over a *protracted* course.

It is readily seen when one considers the pathology that critical defervescence cannot become a clinical experience in broncho-pneumonia, but that the duration must be indefinite and is frequently extended from weeks to months.

VARIATIONS IN THE COURSE.

Lobar pneumonia may occasionally become associated with an acute or chronic bronchitis which has existed for a considerable period and in such instances the new process by weakening the resistance of the child allows the old process to become more prominent. In such instances, rales may be demonstrated in the bronchi throughout the whole course of the disease and in addition there are signs of consolidation. Such a case might terminate in several ways; there might be a crisis on the fifth, sixth or seventh day; the crisis occurring, there might be a persistence of a temperature of an irregular type which was

dependent upon the increased bronchial catarrh; on account of the previously exhausted condition of the child and the previous interference with respiration the lobar pneumonia might follow a more protracted course than usual and critical defervescence be deferred by one or more relapses.

Lobar pneumonia may run a protracted course and this is usually explained by the fact that there is a development from the original focus to neighboring areas. Thus it may in a measure simulate the protracted course of broncho-pneumonia, but with this distinction, that there are absent the daily marked remissions of temperature which are so common to broncho-pneumonia, and in their stead there is persistent high temperature for two or more days with somewhat sudden remission and that soon followed by persistent high temperature again.

A post critical rise of temperature is not uncommon in lobar pneumonia. On the first day of the crisis there may be a sudden elevation of the temperature from normal or subnormal to its original acme and this at once arouses the anxiety of the attendants. Why this occurs, I have never had satisfactorily explained; there is no detectable change in the physical signs and its existence is short-lived for within twenty-four hours the temperature becomes normal again and remains so.

Rarer than any of the other anomalous forms is one in which all of the symptoms are very marked and typical for seventy-two hours or less, and then the occurrence of a sudden and complete clearing up of all the physical signs of the disease, the affection not having gone beyond the stage of congestion.

A rare anomalous type, and yet one that has not proven so rare since skill in the ap-

preciation and correct interpretation of physical signs has been advanced, is that type in which the physical signs of consolidation gradually disappear and the signs of resolution occur but with no marked remission in the temperature. Then after two or three days of improvement in the physical signs there occurs a crisis and uneventful convalescence.

There are some individual symptoms which in children differ greatly from those which are observed in adults. For instance, the symptoms which accompany any rise in temperature are more severe owing to the child's immature nervous system and this is irrespective of the type of the pneumonia. Gastro-enteric symptoms are common and usually prominent features of the onset of the disease and may at times be so severe as to prove misleading. Vomiting which is rare in the adult is very common in children. The pulse rate alone is of no value in infancy and the ease with which its rhythm may be disturbed renders it a valueless guide at this period of life.

In lobar pneumonia at the onset a chill is common to adults, but in children such an occurrence is rare although there may be a condition which somewhat approximates it, as coldness of the limbs or cyanosis (particularly about the lips). In the very young, a convulsion may take the place of the adult rigor. The cough is often so slight as not to attract particular attention and is never as prominent as in adults. Rusty sputum is only observed in very rare instances and most cases exhibit no expectoration at all. Short invasions (abortive pneumonia) are common in children and the disease shows a decided tendency to location in the apices (35 to 40%). The crisis is marked by a more gradual fall in the temperature than in adults and is rarely

accompanied by the sweating, prostration and marked signs which we see in adult cases. Altogether it is a much less prominent feature and this must be recalled in diagnosing and treating the disease in children.

Pain at the onset in children is never definitely located and is usually referred to regions outside of the chest; as to the loin, to the epigastrium or to any situation to which the intercostal nerves are distributed.

The difference in the mortality in lobar pneumonia is strongly in favor of the child and in broncho-pneumonia it is decidedly against the young.

The Diagnosis involves first a determination of the type of pneumonia and this is usually easy unless there is an anomalous course or the two types are complicated. In lobar pneumonia the inflammation at once attacks the lung tissue without a preceding bronchitis and from the onset the whole or part of a lobe is affected. This onset is sudden with well defined symptoms and a definite course in contra-distinction to broncho-pneumonia which is always secondary, more gradually developed, exhibiting a temperature with marked daily remissions and an indefinite course. (See course of disease).

After a determination of the probable type from the history of the onset the physical examination must be used to confirm it. In lobar pneumonia one must not expect to find similar signs as in adults. If the peculiarities of the child's chest are not considered the examination must prove misleading instead of conclusive.

The earliest percussion signs are those due to the acute congestion. In consequence less air gets into the affected area and more is forced into the healthy portions so that over the affected area there

usually is a diminished resonance with an exaggerated resonance elsewhere. But this is far from being conclusive. Percussion may even fail to outline the affected area either because it is limited in extent, is centrally placed and covered with healthy lung or because a gas distended stomach or intestine interferes with the examination.

At the onset, auscultation which is of great value in adults is less in children because of their inability to co-operate in this part of the examination. A feeble respiratory murmur over the affected area with rather high pitch is the rule with exaggerated sounds elsewhere. Later in the disease the physical signs closely approximate the adult type.

differ from what is heard in adult cases, except that because of the usual greater involvement of lung tissue, the sounds are all intensified and more widely distributed.

Even with its variable symptoms the diagnosis of broncho-pneumonia is presumably made if, in an infant, we observed a high temperature with marked daily remissions, associated with much increased respiration, cough and dyspnoea, and positive signs of other disease were absent.

THE DIFFERENTIATION OF LOBAR PNEUMONIA FROM OTHER DISEASES.

The sudden onset with vomiting and high temperature might lead to the suspicion of either tonsillitis or scarlet fever. Tonsil-

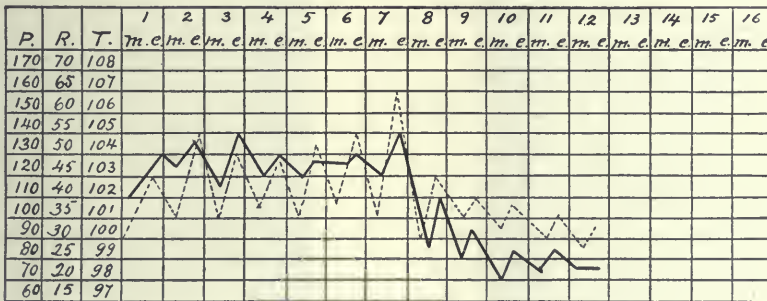


Fig. I. Chart of the temperature (—) and respirations (----) in lobar pneumonia. Child one year old.

In broncho-pneumonia, the physical signs more nearly approach the adult type, although the percussion dulness is so exceedingly meagre in proportion to the extent of the consolidation that if much dependence is placed upon it as an indicator, it will lead to error. It cannot be too frequently stated that broncho-pneumonia may run its full course without the signs of consolidation having been present at any time during the disease. The result is that auscultation is of far greater value in the diagnosis. Auscultation does not markedly

litis offers a true difficulty unless there is a clear history of many previous attacks and the local signs in the throat are marked at the onset. Scarlet fever cannot be excluded until the following day when the characteristic eruption should appear. In those rare instances in which the eruption is delayed or slight the presence of angina after a known or suspected exposure would make a delay in the diagnosis necessary until the physical signs of a pneumonia should appear; then the evidence would be conclusive.

During the first day in infants, an acute gastro-enteritis may be suspected, for vomiting and diarrhoea are so common at this time but with pneumonia as the cause, the temperature and the prostration are out of all proportion to the mildness of the intestinal condition.

If during the first days, a dull percussion sound is detected over the inferior lobe there may arise the question as to its being due to pleuritic exudate. Moderate exudate may give dulness in children, but

LOBAR PNEUMONIA.



Fig. II. Part (or all) of one lobe is congested (|||||); slight dulness may be detected over this area, or there may be only diminished resonance. Crepitant rales and feeble respiratory murmur exist over affected area. All healthy lung is hyperresonant.

associated with it there is a weakened vesicular breathing and not bronchial respiration, as in pneumonia. Herpes on the lips or nose would be evidence against pleurisy as it is so rare in that disease and so common to pneumonia. Vocal fremitus which is so valuable in adult is of no service in this situation in the child. Dependence must be placed upon the character of the temperature, the course of the disease, and the meagre physical signs.

LOBAR PNEUMONIA.

Onset—Sudden high temperature.

Course—Crisis or lysis in a few days.

Signs—Correspond to affected area and suddenly evident.

PLEURISY.

Gradually developed high temperature; lysis with persistence for 3 or more weeks. Signs: slowly developed in lower portions with gradual increase upward.

LOBAR PNEUMONIA.



Fig. III. Congestion increased and in center of affected area, pure bronchial breathing may exist; dulness still remains slight (in solid black).

If even after a careful determination of these points, the cause of the symptoms remains in doubt, an exploratory puncture should be made.

Not uncommonly the onset of a lobar pneumonia may exhibit no physical signs and the constitutional ones which are present (vomiting, possible convulsions, delirium, stupor, and more rarely opisthotonos) suggest meningitis.

A safe guide in the diagnosis is this; without paying too much regard to the

variety and severity of the symptoms, if nervous symptoms are present from the onset and are marked, meningitis may reasonably be excluded. However, if they are present in a minor degree at the onset of the disease and show a steady increase in severity, or if absent at the onset but appearing later and exhibiting this same steady increase, then meningitis must be suspected and not lobar pneumonia.

This guide holds true even in the presence of lobar pneumonia during the course of

LOBAR PNEUMONIA.



Fig. IV. Consolidation (solid black) complete in the second stage with dulness marked; congestion more wide-spread; some rales or friction sounds.

which meningitis may develop. Suddenly developed nervous symptoms (even severe) at the onset need be no cause for serious alarm.

Typhoid fever may be suspected as the cause of the symptoms in those cases of pneumonia which in older children show somnolence with a tardy development of physical signs of pneumonia. But the early occurrence of somnolence and typhoid-like symptoms would be suggestive of pneumonia and decidedly against typhoid.

At most, one could not remain long in

doubt for the tardy physical signs must soon develop. The history of the initial chill would almost positively exclude typhoid in children.

It has been my frequent experience to see in consultation cases of lobar pneumonia which have been diagnosed as appendicitis. In some cases of lobar pneumonia in children there is sharp abdominal pain which may radiate down the thigh upon the side corresponding to the affected lung. The inability of most children to definitely or accurately locate pain and the common tardy development of physical signs in the lung draw attention from the chest to the abdomen. But if a due regard was given to the occurrence of markedly increased respiration rate and this peculiarity of the disease in children was recalled, less mistakes would be made.

THE DIFFERENTIATION OF BRONCHO-PNEUMONIA FROM OTHER DISEASES.

If during the course of bronchitis there is an evident intensification of the symptoms, we must at once suspect the development of broncho-pneumonia. This intensification with lessened severity of the cough (which is worse in bronchitis) helps to distinguish the disease. But of much importance is the development of real dyspnoea which is not present even in the severe cases of simple bronchitis. Limitation of rales to definite areas is very suggestive of broncho-pneumonia for in bronchitis they are more diffuse.

If the course of a broncho-pneumonia be protracted for several weeks the question arises as to whether there is a tuberculous process present or not. This is especially true if there are formed bronchiectasiae and upon examination large, consonant rales are observed with cavernous respira-

tion. Physical signs are not sufficient for the solution of this problem; similar conditions may obtain in both. The family history becomes a most important factor in aiding judgment. The onset of tuberculosis is more gradual (it may have been apparently sudden from a hastily taken history), there is loss of flesh which is disproportionate to the severity of the symptoms, a persistency of all symptoms and a degree of anaemia which cannot be satisfactorily explained. In the presence of these symp-

BRONCHO-PNEUMONIA.



Fig. V. Coarse sonorous rales (O) at first are detected over both lungs or over a limited area. Feeble breathing over limited area with addition of fine sibilant (oo) rales indicates commencement of first stage.

toms backed by a positive family history, even without an examination of the sputum (which is difficult and sometimes impossible to obtain) broncho-pneumonia may be excluded. Less important factors and yet those to which some consideration must be given are the tendency of tuberculosis to develop in those predisposed to it, during convalescence from one of the infectious diseases and particularly rubeola and pertussis, the surroundings of the child and known repeated exposure to infection.

There is always danger of diagnosing broncho-pneumonia when the true condition is intermittent fever and this is particularly true if the disease, malaria, has been preceded by bronchitis or its onset is accompanied by congestion of the lungs, as is sometimes the case. Enlargement of the spleen, intermittence of the temperature instead of simple remission, the demonstration of the plasmodium in the blood and the effect of treatment would determine the presence of the intermittent fever.

BRONCHO-PNEUMONIA.

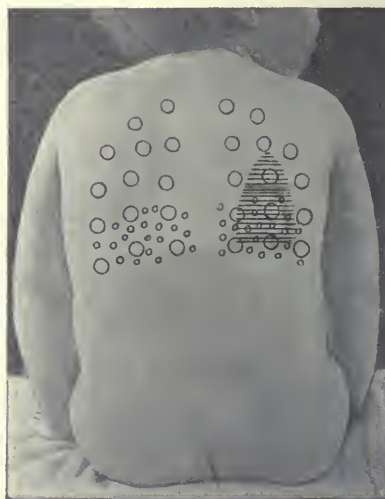


Fig. VI. Coarse rales increase in extent; fine moist rales are heard over enlarged area and are more localized, more superficial, louder, and higher in pitch. May be partial consolidation (= =).

Congenital atelectasis would at times offer some difficulty in its distinction from broncho-pneumonia if it occurred during the first three months of life, but after that it rarely gives rise to symptoms. Excessive cyanosis and absence of marked physical signs in the chest and a history of difficulty in having the infant breathe properly at birth would suggest atelectasis.

The Prognosis. In a previously healthy, well nourished child the occurrence of lobar pneumonia with a limited extension

of the process should excite no alarm. Such cases predominate in childhood and therefore in private practice the mortality is well within two per cent., the fatal cases being those in which there is widespread extension of the disease, or the occurrence of serious complications.

In determining our prognosis we may disregard most special symptoms although some few of these may help us in foretelling the probable outcome (mentioned later) and most of our consideration should be

BRONCHO-PNEUMONIA.

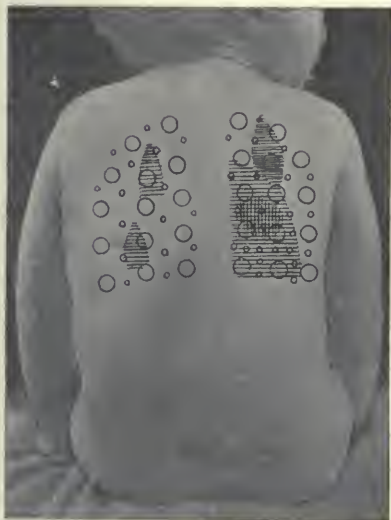


Fig. VII. The area of partial consolidation increases and other small areas are found scattered over both sides. There may be complete consolidation (|=|=|) near the center of these areas.

given to three factors: the age of the patient, the extent of the disease and the presence or absence of complications.

The individual symptoms unfavorably influencing the prognosis are:—vomiting, diarrhoea, tympanites or convulsions occurring late in the disease, a temperature persistently over 105° F. and fever (high) continued over the ninth day.

Broncho-pneumonia must always be considered a serious disease and a favorable prognosis given only after the most care-

ful consideration of every factor. The prognosis is unfavorably influenced by the following factors: the age of the patient, in infancy the disease is dangerous to life; the previous condition, children of previous low vitality or illy nourished are easy victims to even mild infections. Thus it is readily seen that such a disease as rachitis would unfavorably influence the prognosis.

Complications with other diseases:—These always act unfavorably. The individual symptoms which are of value in

BRONCHO-PNEUMONIA.



Fig. VIII. During resolution, the areas of complete consolidation disappear; the partially consolidated areas decrease and are scattered with gradually disappearing coarse and fine rales over both sides.

reaching a conclusion are: cases with a more persistent temperature (as 102° to 103.5° F.) and the explanation of this may be in the fact that the latter instances are those of mixed infection. The inability or lack of desire to partake of food, the occurrence of persistent diarrhoea, vomiting or tympanites are all unfavorable to recovery.

The environment has considerable bearing upon the outcome, institutional cases contributing enormously to the death rate.

The Treatment does not differ greatly from that of the adult case although there must come the modification which is demanded by the age of the patient and the ease with which the digestive system is disturbed. Some of these differences in management must of course be emphasized; for the purposes of this paper we need do nothing more.

In lobar pneumonia if the child is seen early a hot bath should be given and also hot diaphoretic drinks. This is good treatment because so many cases of pneumonia in children are short-lived, and while it is impossible to say what effect treatment has upon this result, we must assist nature as

Complications must be watched for and guarded against and this is particularly true of otitis media and pleural effusion. The danger from cardiac asthenia in children is much over-estimated; it is uncommon for me to be called upon to treat it. If this is watched and treated as any other complication should be and it is not supposed to exist as a matter of course at the time of the crisis (which is usually a mild affair) it may surprise one to find how uncommonly there is call for stimulation.

It is only when certain symptoms and complications force themselves into the cyclic course of the disease that drug giving or energetic measures are justified.

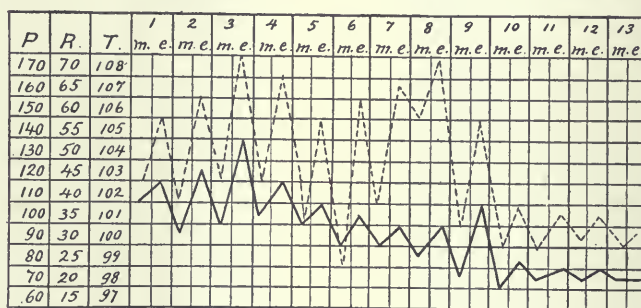


Fig. IX. Chart of the temperature (—) and respirations (----) in broncho-pneumonia. Child one year old.

much as possible. In addition to these measures, I believe that tincture of aconite given at this stage is of great value and the only drug of any value.

When the disease is once established we have only to recall (a) that it is a self limited disease; (b) and that there is no specific treatment.

The immediate demands are (1) a reduction of the diet; (2) the free administration of cool water; (3) mild purgation; (4) abundance of fresh and cool air; (5) frequent cool sponging to keep skin active.

With the institution of these measures drug giving is rarely needed.

In broncho-pneumonia, delay is dangerous; there is no place for expectant treatment here. As I have recommended one drug in the early stage of lobar pneumonia so I recommend one in broncho-pneumonia. That drug is belladonna, but to be effective it must be given in doses sufficiently large to cause flushing of the face and may be continued for the first few days. Small doses are of no value and its protracted use is not indicated. There must be secured for the child (1) the best hygienic surroundings possible; (2) a diet reduced but of such quality as to properly support the system; (3) free administration of water; (4)

regularity of the bowel function; (5) abundance of fresh cool air day and night; (6) strict cleanliness of the body and particularly the nose and mouth; (7) as perfect physical and mental quietude as possible.

The cautious use of the internal emetics are sometimes attended with benefit and while an initial vomiting may prove beneficial in clearing away the bronchial mucus, this method must not be persisted in. Counter-irritation with mustard paste is valuable and it is not wise to wait until pulmonary collapse is suspected, for used early it gives relief from the dyspnoea and cough. Everything that weakens should be avoided; everything that strengthens encouraged.

Stimulation is not alone wise but absolutely necessary after the first few days; delay until the necessity is present means much lost ground, for every one of these cases need stimulation practically throughout. My preference is for a combination of small doses of camphor and whiskey; the camphor being given in sweet almond oil ($\frac{1}{4}$ gr. to five drops) and the whiskey well diluted with water.

Just as early as possible, tonics should be given for delay in this matter as in the case of stimulants may mean lost ground.

42 Gates Ave.

PNEUMONIA AS A SANITARY PROBLEM.

BY

CHAS. E. WOODRUFF, M. D.

U. S. Army Med. Corps.

The attitude of the medical profession towards pneumonia as a preventable disease closely resembles our attitude to tuberculosis two decades ago when that infection was first placed on the notifiable list.

That is, there are all kinds of opinions as to the degree of its contagiousness and a reluctance to make the reports, so that it is difficult to get exact information as to the number of cases except in the few parts of the country where the laws are rigidly enforced. Those sanitarians who are convinced that lobar pneumonia is more or less preventable are rather looked upon as extremists, but whether right or wrong it certainly behooves us to give heed to their opinions, for the annual death roll is appalling. In some places ten per cent. or more of the deaths are due to it and in the country at large it probably ranks next to tuberculosis in the mortality tables. Moreover, every age furnishes cases—though certain decades of life more than their share. So it is highly important to prevent this scourge if possible.

There is considerable doubt as to whether we will ever be able to prevent pneumonia in the aged, for the opinion is very widespread that it is one of the ways in which we normally die after we have run our allotted time of three score and more. We can hardly expect old men to die simply of old age, something must be the final straw which breaks the back of resistance. Consequently as we succeed in preventing early deaths, and thus lengthen average life, there must be a corresponding increase in the diseases of old age. An index of the excellence of sanitation is thus the slow but steady increase of the proportion of deaths from cancer, diseases of the kidneys, circulatory system and senile pneumonia.

Nevertheless there is no doubt whatever that the aged receive their final infection too soon. Scarcely a case of pneumonia comes to our knowledge that we cannot place our finger on some fault of hygiene or sanitation. That is, we die long before

we are worn out, and if we can only prevent these faults we will preserve valuable old men, but the mortality tables will show the same causes of death in later ages than at present. Statistics must be interpreted by making all kinds of allowances, for the figures themselves rarely tell the truth.

In regard to pneumonia at earlier ages we are struck by the fact that feeble children under five and strong men in the prime of life seem to furnish an excessive proportion of cases and deaths, as though sanitation should play an enormous part in prevention, but right here we are confronted by the multiplicity of contributing factors. Shortly it may be stated that anything which reduces vigor makes one less resistant to an ever present infection. It may be all very well to teach that if people will live a sober, upright and godly life they need have no fear of pneumonia, yet it is true that the ordinary ways of making a living do now and then injure us unavoidably, and then is the time when pneumonia would not be contracted if the infection were not so prevalent. There is an increasing volume of opinion that sanitation must step in to prevent the spread of the organisms.

It is right here that the apparent hopelessness of the problem may be stated. The pneumococcus is generally considered a pure parasite which cannot survive long outside of some host. It dies in an hour or so if dried in the light, but will retain virulence some days or weeks if kept moist and in the dark. Like all parasites it could not exist if it killed every host and so it has established amicable relations with those able to tolerate its presence. It is found in the mouths of so many apparently healthy people that practically all the population may be considered actual or potential carriers. Moreover it is now known that it occasion-

ally disappears from the upper respiratory tract even in a notorious carrier as though he had killed it off and were subsequently reinfected. We are quite sure then that if we do get "run down," there is an almost certainty that we will encounter the infection if we are not already harboring it. The apparent hopelessness of prevention is emphasized by the fact that we are more and more coming to the opinion that infections are received directly from persons and not indirectly from things. We cannot avoid pneumonia infections except by avoiding association with our fellows.

All these facts are being used as arguments that prevention is really so hopeless if not impossible, as to be beyond the sphere of practical sanitation. Nevertheless there are a few phenomena which put a different face on the matter, and show that it may be possible to reduce the number of cases in the young adult. Particularly could feeble children be saved from close contacts with strangers, though to be sure many a mother may transfer the infection from her own mouth.

The discussions of the dreadful increase of pneumonia mortality in the last 40 or 50 years, have not sufficiently emphasized two facts. The increase is more in the city than in the country and seems to be coincident with the growth of modern cities which began to crowd people together some fifty or sixty years ago, thus increasing the chances of infection from sneezing and coughing "carriers." The problem would then seem to be one of personal hygiene rather than public sanitation. To be sure men have always crowded together in public and private meetings and must have had plenty of chances to receive the infection directly from carriers, but the usual life was in more or less isolation and with

plenty of fresh air. Nowadays our work takes us into crowds all day long and we are constantly breathing living bacilli recently expelled by a carrier. The greater care being taken to ventilate and light all buildings cannot fail to attenuate the infection, so that there is less and less chance of receiving it from co-workers. Unfortunately we do not know where the infection comes from, and the increasing mortality seems to point to factors of city life itself and though there is a growing opinion that we are infected directly by carriers, it is the height of folly to ignore indirect infection from sputum. Pneumococci can survive some time in street dirt in cloudy weather and it seems reasonable that in the present habit of expectorating in the streets we do inhale myriads of the living organisms every time the wind raises a dust. The problem of prevention then seems to center around the ventilation and general sanitation of all living and working rooms, a renewal of the anti-spitting crusade and enormously more attention to street cleaning.

In personal visits to various cities, the thing which impresses one most unfavorably in the majority of them, is the criminal inefficiency of street cleaning. The chief fault is that so little attention is given to prevention. The average man considers it his right to throw dirt into the street and then have some one else clean it up. At the same time he will not pay for the service and complains bitterly about the taxes if it is done properly. Rigid laws against throwing or sweeping rubbish or dirt into streets are worse than useless in the present ignorance of the people and it is doubtful whether a campaign of education would produce early results, yet that is the only thing to do. Laws are supported by the people after all, and as soon

as the majority are convinced of their wisdom and necessity, penalties can be imposed. It is now the commonest thing to see someone throw a handful of powdered peanut shells in the street, a few minutes later see some one expectorate on them, and then a gust of wind drive the particles of shells with adhering sputum into the face of the next person who happens along. Surely the dangers of street dust can be so fully realized by even the most stupid voter that he will demand deterrent laws. The fines would help to pay for the cleaning.

It has also been suggested that we might return to the good old custom in which each householder kept his part of the street and sidewalk clean. To be sure these are public property but it is a well recognized police power to compel the tenant to clean the snow from his sidewalk. If a few neighbors would keep clean, their increased comfort would be such an object lesson that their example surely would spread. Let the members of the civic improvement societies do this individually and watch the outcome.

The results of placing neat and attractive rubbish receptacles, here and there on the sidewalks, are so good that it is amazing the system is not universal. Yet it is the commonest thing to see streets fairly littered with rubbish and cleaned but once a week or month or even year. If the expense is too great for the tax rate why not induce philanthropists to spend some money that way? There is a widespread opinion that immense fortunes, acquired in the unusual conditions of America whose vast public resources were free to anyone who would take them, are really public property temporarily loaned to rich men as trustees for the people—at least this is the doctrine of certain rich men themselves. The sugges-

tions for the disposal of the wealth are all in the direction of permanent investment in things for the public good, so that the wealth cannot be dissipated but is a permanent acquisition. The building of good permanent roads is also suggested, for it is now known that communities cannot tax themselves sufficiently for the purpose. It is not a far cry from making roads to keeping them clean, nor from endowments for pneumonia research to those for prevention, but the idea of helping a densely crowded people keep clean enough to avoid tuberculosis and pneumonia is rarely mentioned, though the outcry against the enormous cost of street cleaning should raise the point. Studies of populations have now progressed so far we can confidently state that there are some necessities beyond the reach of congested masses. One of these is proper housing and in that direction immense sums are being expended by philanthropists—another is the impossibility of keeping clean in its sanitary sense. They must be helped. To tax them is expecting them to lift themselves by their own boot-straps. Yet it is in this direction of outside help that we must look for the solution of the problem of preventing such pneumonia and tuberculosis as may be contracted from street dirt.

The process of improvement is slow and the millennium far off, so we must be content with a little advance every year. Already we find an appreciable improvement in the spitting nuisance in general. In certain places it has been entirely ended, while there is a marked lessening of the habit even in places where not prohibited. So the outlook is very optimistic and although no practical sanitarian would dare to suggest extreme measures to bring about a perfection of cleanliness at once, yet it is wise to point all our measures in that direc-

tion. Certain cities are now very backward in matters of cleanliness and much can be done at once. The main task now is education as to the necessity of preventing pneumococci from being transferred from mouth to mouth.

At the present rate at which pneumonia is killing off the susceptible we are quickly acquiring by survival of the fittest a racial immunity permitting us to live in street filth, but it is too deadly a method. Far better is a community which can live only in cleanliness for they are saved from all kinds of troubles afflicting a dirty people who may be immune to a few things.

There is much evidence that migration to an unsuitable climate reduces resistance to pneumonia. Eskimos die of it when they come to New York City, and Jamaica negroes in Panama, so that some of our mortality in America among northern European types is unavoidable perhaps. There is an unknown climatic factor which seems to increase susceptibility on going to a warm country or upon the approach of spring. The winter exposures are fatal in some places and harmless in others. Hot weather or hot climate pneumonia is prevalent enough to convince a few observers that the unknown factor is the heat. It has been suggested that our habit of keeping houses too warm is the fault and that in lands where the rooms are habitually cool, the people do not have our deplorable mortality. Whether or not there is any truth in this suggestion, it is one which should be investigated in our sanitary problem of preventing pneumonia, for the relaxation of living in hot air, dry or moist, is a well known phenomenon. Yet this is only one of the thousand matters connected with predisposing causes. The main objective point is the pneumococcus itself. Whether

we can go to the extreme of isolating such cases of sickness remains to be seen, but we can and must keep our streets very clean and in time induce the people to stop the practice of using the highways as cuspidors. The ideal city of the future will have unavoidable dirt removed from the streets as soon as deposited, and all surfaces washed down every night when the weather is not too cold. A dusty day should not be possible, but that is an ideal far in future, and in the present conditions of the early spring utterly out of the question. The difficulties and expense of snow removal will stand in the way for a long time.

THE TREATMENT OF PNEUMONIA.

BY

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New York.

It goes without saying, a patient with pneumonia must be treated in bed, and whenever possible, in a large, well-ventilated room, with sunny exposure and open fire-place,—particularly in winter, the late autumn and early spring.

There should be no unnecessary hangings, covered furniture, carpet, etc., in room—in other words, things to collect dust, dirt, or that prevent a free circulation of fresh air. The windows should be wholly, or partially, open, but there should be no appreciable draughts. Some people in health can resist the latter with impunity; in illness, especially of an acute type, I doubt it very much. The actual fresh air, or roof garden treatment, to my mind, is an exaggeration and a passing fad. It may be useful, and perhaps almost essential, in a very few cases, to get a good result. Usually, and especially in very cold or changeable weather, I am convinced it

will soon be abandoned by thoroughly sane, level-headed practitioners of wide experience. Novelty and radicalism in therapeutics of pneumonia are not calculated to last.

Again, here as at all times, let us be convinced that real conservatism is safest and best, with so few exceptions that they scarcely count. I have seen many kinds of treatment in pneumonia tried and given up, and then another, and another—including expectancy, or doing nothing—which is deplorable—and have come to have well founded, convinced notions as to what is best to do at present. Whether something newer and better will soon arise, I cannot say positively, nor can anyone else. We can only say and affirm, this is the best I know of up to date.

In general, the light in the room of a pneumonia patient should be somewhat diminished, at all events, during the period of fever. Sunlight on the bed, or too near the patient, is prejudicial. The eyes and brain are irritated by it, fever is increased, as well as restlessness and general malaise. Too often, even in a hospital ward, I have felt obliged to direct a nurse's attention to this important, but ignored fact. All noise, loud talking, unnecessary friends or relatives should be kept out of the room, for the patient's sake and their own, too. Any excitement, undue conversation, or even mental attention to others, is a call upon the patient's strength and should be prevented.

Again, we want all the fresh air we can have for the patient, and the breath of others is not conducive to it. Further, and this is a matter, as I believe, of considerable and at times of very great importance, pneumonia is a slightly contagious disease, usually, and in certain seasons and epi-

demics and in bad ambient mediums or surroundings it is imminently so, with certain individuals. These persons, at the time, have very little personal immunity and will, if exposed unduly, take the disease. *When* the special lack of immunity exists and in *what* persons, it is, with our present knowledge, impossible to state in advance. All we know is—it really exists and we should not permit exposure to contagion when it serves no good purpose in any way to incur it, and may possibly bring disease to the individual who foolishly exposes himself. Even in hospitals, so far as possible, patients should be isolated for quiet and to avoid the risk of contagion to others.

Now, there are times when despite all reasoning and common sense, so-called feeling—and often merely emotional and without great or real, continuous value—leaps at a bound, as it were, beyond our control, and danger is uselessly incurred, once or repeatedly. How protect people who thus act efficiently against themselves and their own poor judgment? How be helpful also, in a certain measure, to the patient suffering already from pneumonia? I know of nothing equal at all—and also less objectionable, than the frequent or almost continuous inhalation of beechwood creasote, vaporized by means of boiling water in a croup kettle. The vapors should be controlled as to concentration and duration at one time, according to circumstances and the special susceptibility of the patient. I do not consider it essential or desirable to go into all the particulars of this mode of inhalation of warm creasote vapors at the present time in cases of pneumonia, as I have done so elsewhere, and on more than one occasion. I would add simply that

creasote has some antiseptic value, unquestionably, that it is relatively very innocent in its action and is an anti-catarrhal remedy of highest value. It may be used at times internally, in the treatment of pneumonia, with very happy effects—but here, tact and good judgment are very necessary if we hope to obtain from it evident, good results. Whenever creasote is taken by the mouth in pneumonia, it must be given in solution in small, frequently repeated doses and to those patients to whom the taste or odor may not be too repugnant. With it must be combined ordinarily, whiskey, rum, or brandy—and glycerine.

It is most important to keep the mouth and throat in as good condition as possible. To this end I recommend the use of Dr. Augustus Wadsworth's antiseptic mouth wash and gargle. The sputum also should be disinfected, or the cloths into which the patient expectorates be burned. As a rule, there is no indication for so-called cough mixtures. They serve no useful purpose and are apt to produce nausea and to prevent the assimilation of food.

Food is important in pneumonia, and I object to too great limitation of the things which may be given. It must be light, nutritious and usually in liquid or semi-solid form—milk, broths, eggs, jellies, whey, custards, blanc-mange, etc.—are all unobjectionable. Solid food during the febrile stage must not be given. It is desirable to have the patient drink abundantly spring or a mild alkaline and occasionally effervescent water. From an undue amount of water, however, dyspepsia, with annoying symptoms, may be caused. This fact should be kept in mind. The bowels must not be permitted to be clogged, but must be attended to, if required, with

enemata, or a laxative by the mouth, preferably, an occasional blue pill, followed, or not, by Hunyadi or Apenta Water.

The patient's position in bed is important. Patients must not lie for any length of time absolutely flat on the back. They must be turned now on one side, now on the other. They must be raised more or less in a semi-upright position, supported with a bed rest, protected preferably with a firm pillow, of horse-hair or other material. In this way, local congestion, and particularly at the base of the lungs, is prevented and the dreaded hypostasis avoided or prevented, which is only the first stage of another development of the disease, which may very soon go on to consolidation. Counter-irritation to the chest walls by means of a liniment such as that of soap liniment and turpentine, applied with gentle friction from time to time, on that portion of the chest easily accessible, is desirable. As to the ice bag or cold compresses to the chest walls, these I disapprove of absolutely, and in no case do I prescribe them, despite much favorable report from prominent physicians.

Poultices I also disapprove of as a rule. They are cumbersome, hard to manage, and while they give temporary comfort, their disadvantages are many and serious. When there is much pain locally, unrelieved by liniment and friction, I make use of dry cups, the electric pad, hot water bag,¹ or a small hypodermic injection of morphine and atropine. One or two leeches are also useful, but they are annoying to the patient and should be reserved for relief of the right heart when it becomes engorged. Applied then inside the apex of the heart or under the right lobe of the liver, six in

number, they are often invaluable and will save a fast ebbing life, when other means without them are vain. I consider the profession owes a debt of gratitude to Dr. D. B. Lees of London for his well-timed insistence upon this important fact. Of course venesection may take their place and does—a fact to which I have directed attention many times with what force I could command.

The old time method of abundant and repeated blood letting was radical and bad; the modern method of ignoring blood letting is not infrequently equally bad. In a strong, robust, full-blooded man, it does in the way of relief what nothing else will. In the case even of a relatively weak, pale, nervous man or woman or child, when the epigastric heart beats are pronounced, the jugulars distended and even pulsating, and the second sound of the heart is losing its snap or accentuation, then bring in a few leeches locally and their almost immediate effect to relieve dyspnoea, quiet and diminish the number of pulse beats and relieve great restlessness, is nothing less than magical.

Formerly, I made intravenous saline injections or hypodermoclysis after venesection. Now, I confine myself to a saline injection by the lower bowel, if required for stimulation or simply to add to the fluid constituents of the blood and thus perhaps to lessen the intensity of the pneumonic toxemia.

Fever, as a rule, should not be combated directly, but if seemingly required, we may attempt moderate reduction of temperature with sweet spirit of nitre, or spirits of mindererus. Quinine in tonic doses is also useful and may, and probably does, act at times efficiently to combat the noxa of the disease.

¹ Heat over the region of the heart by either pad, or hot water bag, is a valuable stimulant to impaired cardiac power.

Alcohol, or vinegar, and water, made use of for tepid or cool sponging of the limbs, especially the legs, thighs and feet, promotes comfort, quiets restlessness and may, perhaps, lessen indirectly temperature. In the same way, an ice-bag to the forehead or scalp, properly supported and light in weight, is also useful with some patients, to soothe an irritated brain and promote sleep. The coal tar products, such as antifebrin, antipyrin, and phenacetin, should not be given, either to lessen temperature or to promote temporary comfort. In my judgment, they do much harm, even in moderate doses.

How effectually to give some patients the sleep they long for and need urgently, and yet not do them great and immediate injury, is to me, as yet, an unsolved problem. The best that may be done is with the hypodermic syringe and making use of morphine and atropine—but *never* except in minute or very moderate doses.

The next best thing to try is the internal use of the mixed bromides. Whenever the breathing is much embarrassed, and especially when it is the lungs which are seemingly the primary cause of it in great degree, free use of compound oxygen inhalations are of untold value. When I say compound oxygen, I merely mean oxygen with a certain proportion of nitrogen, to make it less irritating locally to the bronchial tubes.

Meara¹ refers to Magnus Levy in a commendatory way, apropos of the value of oxygen in the following terms: "He calls attention to the restlessness and the convulsive efforts of the respiratory muscles in dyspnoea, which muscle effort, as I have tried to emphasize in considering the meaning of rest, increases greatly the demand

for oxygen. The inhalation may break this vicious circle and induce rest, and that is exactly what morphine does and accounts for the brilliant results we so often see following its administration in dyspnoea."

In order to avoid the terrible mishap of a threatening heart clot, I advise lemonade as a refreshing drink, or citrate of soda in the milk, or an occasional dose of aromatic spirits of ammonia, with or without a few drops of tincture of nux vomica.

For a weak or failing heart, the best old brandy and coffee are primary. They are also helped greatly with best coca preparation, with tincture of strophanthus and also with caffein citrate, given with good judgment consecutively or alternately.

Young people and people up to, or perhaps fifty years of age, are occasionally helped with some form of digitalis. After forty or fifty years of age, I am now afraid of it almost invariably unless accompanied or followed by nitroglycerine. In appreciable doses, it often upsets the stomach and increases the work of the heart by its contracting action on small blood vessels. If I give it at all, I prefer the best tablet triturates, crystallized digitaline—or where there has been old, preceding heart disease, mainly dilatation, Trousseau's diuretic wine. It should be remembered, if crystallized digitaline be given, that the doses must be much smaller than those of the amorphous form. To begin with, not more than the fourth of a milligramme is safe, until the personal susceptibility has been tested.

I have not spoken of strychnine in pneumonia, simply because in the last year or two, I have come greatly to distrust its value as a heart stimulant and rely much more upon strophanthus and caffeine, either by mouth or if need be, hypodermatically.

¹ N. Y. Med. Jour., Jan. 8, 1910.

It is important to add that hitherto it has always been difficult precisely to determine when it was wise to commence giving cardiac stimulants in pneumonia. By some it is stated that they should be given previous to the heart showing any evidence of weakness. Others think it is ill-advised and only vaunt their use when this weakness is already shown in one or more ways, as for example, a developed blowing murmur at apex, systolic in character, or simply muffling or weakness of the first heart beat, or lack of accentuation of pulmonary second sound, or weakness, rapidity or irregularity of radial pulse beats. But even when it was determined proper to begin the use of stimulants or direct cardiac tonics, it was equally difficult to know accurately what doses to prescribe or when to diminish or stop their use, with greatest advantage to the patient. At present, we have perhaps a more promising outlook in the skilled and careful use of the sphygmomanometer, if Gibson's statements be further corroborated. He believes that with its proper use, the reserve force of the heart may be accurately estimated. He further states that when the rise of the column of mercury in millimeters is persistently greater than the number of the radial pulse beats per minute, the outlook for the patient is favorable—in other words, under judicious treatment they, the patients, will and do almost invariably recover.

The converse is also usually true—namely, that with lower arterial pressure estimated in millimeters on the sphygmomanometer than the number of pulse beats, the patient will usually die. To this he has found one exception in fifteen cases of pneumonia, carefully observed. I am now having this statement of Gibson carefully

verified, and I should become convinced of its value when I have further valuable facts from one or more experienced observers who take cognizance of and give due appreciation to the many pitfalls which we now know may be attached to the use of the sphygmomanometer—at first and for quite a while, regarded as an instrument so simple in its application, that any member of the hospital house staff could very soon make reports of his observations with it, that we might regard as accurate and important. We now know differently.

Among the complications of pneumonia, one of the gravest is oedema of the lungs. Remedially, it calls for active stimulation or the use, moderately, of morphine and atropine hypodermatically. Leeches, locally applied, are also occasionally valuable to relieve an imminent condition. Abdominal meteorism may likewise become a very grave and threatening symptom. Turpentine stupes, or turpentine by rectum in enema is the best local treatment. Internally, nux vomica or ignatia may be given with some advantage.

Delayed resolution is best combated by counter-irritation, tonics, and later, change of air.

As to sera and vaccines, up to date, I know of none that practically have borne the tests sufficiently to justify confidence in their curative efficacy.

In no disease is it more important than in pneumonia to have the almost constant, watchful care, not of the learned scientist, laboratory expert, or even great consultant, but the judicious, self-sacrificing and practically invaluable help of the experienced doctor, who has tended and cheered many a case of pneumonia, which except for him would *not* have come safely through the severe ordeal.

The sooner we all learn to recognize in this disease above others, that the character and qualities of the attending physician are above price, the better for the patient, the friends and the relatives.

With two good, self-reliant nurses, who fill well their role, but don't transcend it, and the absolute confidence and non-interference of others, and willing, unquestioned obedience on all hands, the patient stands his best chance to recover from a very serious disease for which at the present time, unfortunately, we have absolutely no specific remedy. Each and every case is a law to itself in one or more directions, but here horse-sense is invaluable, when annexed to a skilled physician's care and *dutiful*, trained nursing.

THE TREATMENT OF PNEUMONIA.

BY

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The very wide difference of opinion as to the possibility of successfully aborting or even treating pneumonia existent in the profession today is due very largely to the fact that while one practitioner applies, with indifferent results, certain antiquated but "authorized" remedial measures to such of his patients as present the classical symptoms of the disease, expecting congestion to be followed by red hepatization and that condition by gray; the other, and more successful therapist, ignores alike set prescriptions and the named disease and sets

out at the earliest possible moment to correct the pathological conditions present in the individual.

The one practitioner may acknowledge that the patient "presents every sign of an on-coming pneumonia" and institute treatment of an expectant character BUT his teaching leads him to withhold a definite diagnosis until the disease has run its definite course—under a rather indefinite and decidedly limited medication. This gentleman has been told—and still reads that pneumonia is "an infectious disease running a well understood and self limited course," i. e. certain pathological conditions MUST obtain, one after another, and there is no power in drugs to prevent (or even materially modify) the same. So, the more profound the pathological knowledge of the physician the weaker his therapeutics or, in other words, the more classical and scientific the doctor the less opportunity has his pneumonia patient to get rational *treatment*. At first sight this may seem an absurd and libelous statement but unhappily, in this instance the truth is greater than the libel and a few moments' consideration of the position assumed by the so-called leaders of the profession will prove that fact conclusively.

The era of therapeutic nihilism through which we are passing is without question also a transitional stage; the average mind accepts that which is obvious together with such statements as may emanate from authoritative sources. Hence, the modern clinician, taught by men (who having none but unsatisfactory drugs to work with secured but uncertain results) that medicines are not to be depended upon goes his instructors one better and calls drugs "useless"—as indeed, many of those he is familiar with *are*!

Moreover, he has done an immense amount of laboratory work and dissected many cadavers. Now, the gross pathology of pneumonia is obvious enough; there is no mistaking the profound changes which occur in such vital organs as the lungs and the microscope, bearing a "particularly beautiful" slide tends further to convince the student that such conditions *could not possibly* be affected beneficially by mere medication. Then come the autopsies on hospital patients who died from this dread and "self-limited" disease.

What does the medical student see? Conditions which would inevitably (as they did) render life impossible. What is the use of wasting time then in listening to those deluded individuals who talk about "effective treatments" for pneumonia? Why burden one's mind with useless detail relative to the action of perfectly useless drugs or gather information regarding the therapeutic procedures of the uninformed? The college and laboratory trained man of 1910 deals with *facts* not theories—at least, with some facts and a good many theories so disguised—handed down from the age of mysticism by preceptors who learned their therapeutics from cheerful gentlemen who "puked, purged and bled"—and scoffed at the idea of vehicles propelled by steam, to say nothing of automobiles and airships.

But now, as then, "the world moves"—lately, with wonderful celerity, and that which "was not" yesterday, today IS. Physicians more eager to cure than pose as savants have refused to look upon a live patient and a cadaver as similar material and accepting literally the injunction to "heal those that be sick," persist in doing so, believing that the Almighty who has provided for the repair of shattered bone

and tissue also intended that an inflamed and congested lung, when intelligently cared for, should regain normal conditions.

This species of doctor recognizes fully his limitations and extends a hearty meed of praise to such of the brethren as toil with scalpel, test-tube and microscope, for through them he has learned wonderful things; but he also sees that "much learning has made them (therapeutically) mad" and unable to distinguish clearly between a section of pathological tissue and a sick man. So he learns from them whenever and wherever he can, and with a better understanding of pathology practices a more precise therapeutics. He has too (thanks to the chemist) positively efficient drugs to work with; he knows that a small dose of an active principle, repeated at short intervals, will inevitably produce certain definite results, remedial or physiological. He realizes now, as never before, the fact that a disturbed body chemistry underlies most diseases, and knows that a system loaded with toxins originating in a foul intestine can never resist invading bacteria.

To differentiate definitely; the one physician is a diagnostic bacteriologist and pathologist (peculiarly the latter) while the other is all these *and a therapist*, possessed moreover of a knowledge of his materia medica which enables him to perform every-day what, to "the other fellow" appear "impossibilities."

As a matter of fact the rational treatment of pneumonia is very simple; the patient does not present himself to the doctor, as a rule, when the pathological processes are at their height but shortly after or during the occurrence of the prodromata. At this stage of the disease *proper* medication produces a prompt and profound effect; indeed, if the doctor is able to recognize the

abnormal conditions present in the individual and administer the *right* remedies therefor he will materially modify, if he does not put an end to, the disorder.

To treat "pneumonia" will not do; to institute routine procedures is entirely useless, but naturally, certain fairly constant conditions will be observed and these almost always yield to the same remedial measures. The claim that pneumonia can be "aborted" has been fiercely ridiculed, and the men making it are called "ignorant," "impostors," quacks, etc., etc. Yet day after day these men gain in prestige and practice and show, as year succeeds year, a lower pneumonia mortality rate. Practicians who frankly state that five years ago they lost at least one out of every three cases now feel chagrined if they lose one patient in twenty. A clear idea of the conditions they have to deal *with*, and familiarity with definite remedial agents and methods, have brought about the change.

The writer having been among the first few who urged the curability of pneumonia cannot but feel elated to note the rapidly growing acceptance of this important truth among the rank and file of the profession. Even the latest text-books on "Practice" refer in hopeful terms to the efficacy of medicinal measures. Wilcox says, "Taking everything into consideration the treatment of pneumonia is *especially* satisfactory."

A. H. Smith in a most scholarly and practical article upon pneumonia in the "Reference Handbook of the Medical Science" states, after recommending the use of certain drugs: "the substitution of lysis for crisis in a large majority of cases is a very remarkable result of remedies of this class and demonstrates the *power they possess to modify the usual course of the disease.*"

This is just what we have so earnestly upheld; provided we know just what conditions exist and have at our disposal positively-acting remedial agents which will produce definite and desired effects upon the living body we *can* "modify the course of a disease"—yes even control and often, *abort* it. Just as long as we try to treat "pneumonia"—the named disease—with a selection of formulae devised and advocated by men eminent in the profession, before even the cause of pneumonia was clearly understood, we shall fail (even as our ancestors failed) and, to cover our own incompetency, will term the disease "self-limited." Ignorance—especially in high places—is ever intolerant: Wisdom does not hesitate to embrace truth even though she has to step down from her pedestal to do so.

It would be superfluous to describe the symptoms or course of a typical lobar pneumonia; every physician knows that it is an acute infectious disease in which the micrococcus lanceolatus or the *B. pneumoniae*—or both bacteria together—invade the air cells of one or more pulmonary lobes where they propagate in a fibrinous exudate from the capillaries and produce a toxin which infects the entire system. Moreover, that portion of the lung which is involved becomes impervious to air and the body is deprived of a large proportion of the oxygen necessary to maintain life. The classical symptoms—chill, fever, dyspnea, expectoration of rusty sputum and severe prostration—evidence plainly to the observant clinician the conditions which exist.

But in order to correct them—to treat the patient effectively—it is necessary to remember that the invading bacteria are omnipresent and become dangerous only to the individual presenting conditions favor-

able for their 'propagation. The normal individual may be the host of numerous B. pneumoniae; streptococci, staphylococci, *et hoc genus omni*, may exist *pro tem.* in his respiratory passages but he does not contract pneumonia. There must be lowered resistance—an autotoxemia—first, the pneumonia is distinctly a secondary derangement. Once we recognize this fact we shall naturally strive to eliminate at the earliest moment possible all the undesirable matter the body contains: We shall, while eliminating, administer systemic antiseptics and increase leucocytosis as quickly as we can. If the body with a normal chemistry can escape pneumonia then the body already infected will most certainly repel the invading germs and neutralize the toxins emanating therefrom, provided we intelligently aid in the restoration of normal conditions.

The physician who is slowly but surely passing away gave fearful and wonderful medicines, said to "be good for" certain diseases; too often he failed to reach the disease but in trying to do so destroyed his patient. The precise therapist treats *patient*, re-establishes the equilibrium of the deranged vital processes and *cures disease*.

As I have already pointed out we know almost precisely the conditions which exist in a pneumonia patient. Knowing this and knowing as clearly just what certain remedial agents will accomplish, it is comparatively a simple matter to outline an effective treatment.

Carelessness or over-certainty is, however, as fatal here as anywhere else; one individual, presenting perhaps the same gross symptoms as the next, may require materially different medication.

Grave complications not infrequently exist. An overtaxed heart may require immediate support; renal congestion may have been present for some time and the system may be literally swamped with metabolic waste. Hence, in every instance, the first examination should be minute and the urine, feces and blood forwarded to the nearest laboratory. The report of the pathologist will materially assist the physician in securing results. It is well to remember that after the first forty-eight hours the chlorides in the urine are greatly reduced—sometimes even entirely absent. More or less albumin will be observed during the height of the disease.

The physician who has failed to keep up his physiological and anatomical knowledge must remember also that the lungs have a dual circulation therein differing from every other structure. The bronchial arteries supply the *nutrient* from the left side of the heart while the pulmonary supplies the *functional* from the right heart. To comprehend the phenomena observed in pneumonia one must realize the existence of this condition.

The main essentials of treatment in a case seen during the congestive (first) stage are: To relieve the local congestion. To secure prompt and thorough elimination, via bowel, kidneys and skin. To produce as rapidly as possible, intestinal and systemic antiseptics. To maintain vitality of the patient and increase his resistance. To secure and maintain cleanliness of the nares, buccal cavity, and upper respiratory tract.

None of these things are difficult to accomplish and quite frequently after twenty-four hours of forced elimination and exhibition of antiseptics the fever modifies,

circulatory equilibrium is established and the whole train of ominous symptoms disappear.

The method of procedure which has proven most successful is outlined in detail herewith. It must be borne in mind however, that perfect results are only secured by adherence to a perfect technique and that "medication must always be modified to meet the conditions present in the individual under treatment."

Prophylaxis. As many of the victims of pneumonia attribute, and rightly so, the onset of their case to an exposure to cold, it is evident that such exposures should be avoided. And this is especially true in those whose body resistance is lowered through sickness or excesses of any kind. More careful attention to the ordinary "colds" should be sought as the mucous membrane during such attacks furnishes less resistance to the entrance of infection. The aged should be watched carefully during their winter cough or in attacks of bronchitis which might be trivial in those of younger years.

Plenty of fresh air, especially in sleeping quarters will do much to minimize the danger of pneumonia.

The sputum of afflicted patients should be burned and if in a hospital the patients isolated.

GENERAL HYGIENE.

The Sick Room. The proper care of the patient's environment is very essential. The room should have a southern exposure, thus admitting plenty of sunlight. There should be many windows which remain open night and day. Fresh air and plenty of it is the main consideration in the treatment of pneumonia. For it is upon the adequate supply of oxygen that the comfort and indeed the life of the patient depends. The temperature of the room

should be kept at about 60° F. Fresh air is essential but draughts must not be permitted. There is no question of the usefulness of medicated steam; a small vessel of water in which a few drops of eucalyptol, or oil of pine, or Scotch fir, have been dropped can be kept boiling over an alcohol lamp. The medication must be renewed from time to time. Except in the coldest part of the year I would recommend the out-of-doors. A sheltered porch is desirable. The coldness of the air is not a detriment but a positive help in soothing and yet invigorating the patient. Undue draughts in a room may be avoided by tacking cheese cloths across the open windows.

The bed should be firm and smooth with the sheets pinned down to prevent crumpling. To maintain an even heat within the bed it is a good plan to spread papers beneath the mattress and keep a hot water bottle at the patient's feet. Light, warm comforts should cover the patient while the clothing should consist of a light flannel night shirt which opens down the front to facilitate the examination of the chest. All unnecessary furniture should be removed.

As regards the personal hygiene of the patient the mouth and nose should be cleansed daily with a boric acid or alkaline antiseptic solution, especially should these parts be cleansed before taking medicine or food. The genitalia should be kept scrupulously clean. Care should be taken in the use of the bed pan that the patient does not have to strain. Let the visitors be few and the nurse one who is firm and quiet.

Hydrotherapy. In the early stages of the disease when there is severe pain in the chest the use of the hot water bag or a hot chest pack is indicated. The dilatation of the blood vessels obtained thereby relieves congestion. Some physicians prefer applying a hot kaolin paste in a fairly thick layer over the chest, first previously applying to the skin of the chest a little guaiacol and camphorated oil, equal parts. In some cases I have preferred this to the chest pack, but not in the majority of cases. If the kaolin paste is applied it should be covered with a layer of cotton or a snugly-fitting thin undershirt. Later, during the height of the fever, a cold sponging is

soothing to the patient and reduces fever. The sponging should be done daily, even if the temperature be not high, for the purpose of cleansing the emunctories of the skin and removing toxins in that way. For reducing the temperature the application of the cold chest pack is one of the surest and most rational methods. The pack can be applied in the following manner. Several thicknesses of soft linen are cut of a size to reach more than around the body and to extend from the clavicles to the umbilicus. A cut is made so they may fit under the arm at the shoulder and flaps are made to come from the back over the clavicles. Two pieces of soft flannel are cut of similar size and shape. Two of the linen cloths are wrung fairly dry from water of 50° to 60° F. temperature and applied to the body with one of the flannel cloths on the outside. The flaps are brought over the clavicles and the whole jacket pinned down the front. Such a pack may be renewed whenever it becomes warm from the body heat. Some patients may not react well to the cold pack, as evidenced by cutaneous blueness and shivering, and the temperature of the water will have to be higher: i. e. 70° to 80°.

Whenever there is intense congestion of the chest with an accompanying cerebral congestion a hot mustard foot-bath will determine the flow of blood to the lower extremities and help to give relief, along with certain drug medication to be described later.

Dietary. As in all acute fevers milk is the best food, for it contains the fat, proteid and carbohydrate molecules so essential in the body economy. To raise the caloric value of the milk, milk sugar with a value of 120 calories to the ounce may be added so that the patient is not nauseated with the amount of milk alone needed to supply his daily need of 2,500 to 3,000 calories. Buttermilk, kumiss or peptonized milk can be given if more acceptable to the patient.

Grape juice, meat broths, soups, whey and cereals may all be added to the list if relished by the patient and are well borne by the alimentary tract.

Eggnogs form a very suitable food, more especially during and following the crisis as well as during convalescence.

Water should be given generously and to insure a definite amount should be given at definite intervals. Lemonade or mild aperients are generally agreeable to the patient and are of value for their mild diuretic or laxative effects.

In the majority of cases of pneumonia it is necessary to cleanse the intestinal canal thoroughly and quickly. This can be best accomplished by giving calomel gr. $\frac{1}{6}$ and podophyllin gr. $\frac{1}{6}$ at half hour intervals for three hours and an hour after the last dose a full teaspoonful of effervescent magnesium sulphate should be taken. This saline draught may be repeated with advantage in 24 and 48 hours.

If it be possible, hot water should be used. In some cases it is well to give the salts dissolved in a small quantity of cool water (not *cold*) and follow immediately with a draught of plain hot water.

To relieve the local congestion, three drugs exhibited conjointly prove pre-eminently efficacious. Aconitine, digitalin (germanic-pure) and veratrine are exhibited half hourly or hourly till the skin moistens, temperature falls and the pulse rate reaches 80 or below.

The usual dosage for an adult is gr. 1/134 amorphous aconitine (or 1/500 crystalline aconitine), gr. 1/134 veratrine, and gr. 1/67 digitalin; children over twelve may receive half the above dose for six doses then one-quarter the amount. Children under twelve but over five one-quarter at first then one-eighth. Patients under five one-eighth from the first; this dosage may be reduced still further as results are secured. In *asthenic* cases strychnine gr. 1/67 is substituted for the veratrine. Either combination may be secured in granule form and so exhibited or solutions may be readily prepared. Aconitine and veratrine are more serviceable during the first and beginning of the second stage of the disease.

If the bowels are known to have been sluggish an enema of warm salt water should be given before the medicine acts. If it is retained for a short time so much the better.

After the bowels have moved once or twice the patient receives every three hours, five to ten grains of the triple sulphocarbolates (lime, zinc and soda); a

draught of water is ordered with each dose.

Nuclein, ten minims, is exhibited hypodermically once or twice daily as the severity of infection may demand; if the patient is aged or weakly or the disorder somewhat advanced it is highly desirable to induce a hyperleucocytosis as rapidly as possible and I do not hesitate to give fifteen or even twenty minims night and morning. In lighter cases ten minims subcutaneously once a day and an equal quantity absorbed from the buccal mucosa every four hours will suffice.

Chest pains which may at first be severe usually yield to two or three doses of bryonin (gr. 2/67) and hyoscyamine (gr. 1/250); or if necessary in extreme cases morphine $\frac{1}{8}$ to $\frac{1}{4}$ gr. hypodermically as a matter of fact, after the bowels have been evacuated and the defervescent begins to act, comparative comfort obtains in most cases.

These are the simple and thoroughly effective therapeutic procedures called for in nine out of ten pneumonia cases. It is essential to secure rest, quiet, elimination and defervescence; to increase the natural resistance and render the tissues and fluids of the body inimical to the welfare of the invading bacteria. These things we can accomplish perfectly by taking the steps described; and very frequently no other medication will be required.

It must be borne in mind that the amount of drug which will suffice in one case will not do the work in another. Hence it is necessary to push the aconitine, veratrine (or strychnine) and digitalin combination till defervescence is secured. The same thing applies to the eliminants. If free stools do not follow the six doses of calomel and podophyllin or if the patient is in the habit of "taking medicine for his bowels" double the dose or repeat exhibition till desired effects are obtained.

Usually by the second day the cough is fully developed and a stimulating expectorant cough mixture may be required, such as the following R:

Ammonium Carb.	10.0
Syrupi Tolutani	20.0
Inf. Digitalis	60.0
Mixt. Glycyrrhiza comp. q. s....	240.0
M. Sig: 16 cc. every 3 hours.	

If cough be excessive codeine sulph. gr. 1/12 and Syrup of Dover's 10-15 minims may be added to each dose. As to the value of digitalin here that will be discussed under cardiac symptoms.

An icebag to the head allays cerebral congestion and the accompanying headache.

When there is restless insomnia a hypnotic is indicated to obtain needed rest. The depressant hypnotics should be avoided. Veronal gr. XV or Sulphonal gr. X given in a warm drink and repeated in two hours may suffice.

The condition of the kidneys should be daily noted and small doses of the alkaline diuretics given, such as potassium acetate or citrate gr. XV t. i. d. in a full glass of water. If there is an existing nephritis, strophanthin or digitalin may be indicated for their influence on both heart and kidneys. The caffeine group of diuretics are very useful in these cases, notably the sodium benzoate of caffeine in large doses. If marked uremic symptoms occur great benefit can be derived from venesection. Fluid diet only, should be permitted. Alcohol, if used at all should be administered with great caution. I am convinced that when the kidneys are badly involved in cases of pneumonia alcohol should not be given.

SPECIAL INDICATIONS.

Cardiac Complications. Owing to the pulmonary congestion the increased work thrown upon the heart is enormous and our chief concern in a majority of the cases of pneumonia should be as to the heart's ability to stand the test. It has long been a mooted question as to when cardiac stimulants are indicated. I am of the opinion that after the congestive stage the heart's muscle should be strengthened and quieted. It does not seem advisable to wait until signs of weakness or collapse appear before administering cardiac tonics or stimulants.

For its sustaining and strengthening effect on the cardiac muscle digitalin given in small repeated doses, is primarily thought of. Strychnine in dosage of gr. 1/40-1/30 t. i. d. is a valuable cardiac stimulant and in many cases more efficient than digitalin. As regards the use of alcohol I feel that its value is chiefly in replenishing tissue waste

or rather preventing it. It is a good diffusible stimulant although not a cardiac stimulant per se, and performs especial service in the patients addicted to its use. Here it is best given in the form of whisky from 2-3 ounces in 24 hours. Alcohol, however, should be reserved for an emergency to tide the patient over a critical period. Alcohol generates no new force but only enables a patient to draw easier from his reserve power. Its administration should be discontinued as soon as the effect desired is obtained.

If signs of cardiac collapse appear such as weak thready, possibly imperceptible pulse, with cold, clammy sweat rapidly acting cardiac stimulants are indicated, such as ammonia, the action of which drug upon the nasal mucous membrane is quickly conveyed reflexly to the heart long in advance of direct action from absorption of the medicine. Ether hypodermically stimulates quickly and effectively as does camphor. Venesection is of great value when there is overfilling of the right heart. In other cases of myocardial insufficiency digitalin and strychnine are the best remedies. It is well to remember, however, that *active* stimulation is not indicated when compensation is undisturbed and should be postponed usually until the crisis or just preceding it.

Meteorisms. A very common condition in pneumonia, very distressing to the patient and often intractable to treatment. In guarding against this symptom appearing the patient should have free movement of the bowels daily by using calomel and salines. Foods which produce fermentation in the alimentary tract should be avoided. The intestinal antiseptics are indicated also. If the condition is present turpentine stupes should be applied to the abdomen and enemas of turpentine and water or milk of asafoetida and water given. Eserine gr. 1/10 hypodermically will stimulate peristalsis in the musculature of the gut and assist in expelling gas.

Respiratory Complications. If the respiratory center becomes paretic, free elimination to overcome the toxemia, full doses of strychnine hypodermically and inhalations of pure oxygen are invaluable. In administering the oxygen no mask should

be used, for it is not advisable to allow the oxygen to be inhaled directly or too rapidly. If properly administered the respirations will be slowed, increased in depth and strength and cyanosis will disappear. The effects must be the guide for the quantity used and the frequency of its administration.

Should edema of the lungs occur dry cups should be applied to the affected side or venesection with the hypodermic administration of powerful heart stimulants, such as digitalin, strychnine, ammonia, ether, etc. Hypodermics of adrenalin, 1 to 10,000, are of great value in this condition.

Pneumonia of the Aged. In a general way the treatment is the same as heretofore outlined. There are certain precautions, however, to be remembered. The heart must be carefully watched and its strength maintained by strychnine, strophanthin or alcohol. Old people are usually benefitted by the moderate use of alcohol. Digitalin is ordinarily contraindicated in these cases. External applications should be tepid or warm. The diet light and easily digestible. If the bowels are inactive they should be moved by means of suppositories or enemas. Laxatives should not be given. Catheterization should be resorted to if necessary. Free ventilation is necessary, but old people cannot endure the cold air so beneficial to younger patients.

Crisis. Support the heart with strychnine hypodermically or other rapidly acting stimulants. Here large doses of strychnine must be given. I have given gr. 1/15 hypodermically every three hours to an adult in the crisis of pneumonia.

Empyema. Aspirate and if abscess of any size resect one or two ribs and drain. Give tonics and restoratives.

Delayed Resolution. Fibrolysin may be tried, lung exercise, fresh air and good hygiene.

When the pleurae are markedly involved it is well to give bryonin and asclepedin together every two hours till improvement takes place. The patient should receive nothing but milk, barley water, fruit juice and water or clam bouillon for the first few days. Barley water with a little lemon juice added is the safest beverage and the most

pleasing to the patient. It should, however, be properly prepared.

When the acute symptoms have subsided it is desirable to give for a few days guaiacol carbonate, calx iodata and nuclein. The proportions I have found most satisfactory are guaiacol carb. gr. 1, calx iodata $\frac{1}{2}$, nuclein gtt. 10; one such dose is ordered every four hours. There is no doubt that resolution is markedly hastened by the use of this formula. Later as tonic reconstitutives are indicated the triple arsenates (iron, quinine and strychnine) should be substituted.

Convalescence. Patient should remain in bed following crisis until there would seem to be no danger to the heart in arising. This may be one week following or three, depending upon the severity of the attack and the recuperative power of the patient. Iron, arsenic, nuclein or the triple arsenates of iron, quinine and strychnine or other tonic restoratives should be given and patient should remain out of doors in the fresh air and sunshine as much as possible. Change of climate may materially cut short the convalescence. The condition of the appetite and digestion must regulate the quantity and kind of food given. Nutrition must be improved and body weight increased but efforts to unduly force matters in these directions are unwise. Worry, care and excitement should be avoided.

THE USE OF VACCINES IN THE TREATMENT OF PNEUMONIA.

BY

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The theory of bacterial vaccines is that in bacterial infections the infected body absorbs bacterial substances and products. According to the amount of bacterial substances and products absorbed, immune substances are produced. When much is absorbed, sufficient immune substance is usually produced to cure the disease, but when little is absorbed, not enough immune

body is produced to cure the infection, which then becomes chronic.¹

Acting in accordance with this theory, an appeal² was made to the medical profession of Massachusetts by Dr. Timothy Leary, of the Tufts College Medical School, having as its object a collective investigation of pneumo-bacterin for the purpose of determining its value in the treatment of lobar pneumonia. This appeal was made after three years' experience in the use of bacterial vaccines by Dr. Leary.

Before taking up the subject, the author placed the bacterin in the hands of several groups of medical men and obtained reports of 83 cases. Pneumococcus vaccine was furnished for the treatment of 34 cases of the alcoholic type, of whom 6 died (17.7%). In a larger series of cases of ordinary pneumonia (49) 15% came to a crisis in 3 days, and but 2 deaths were reported. The total deaths for the series of 83 cases were 8, or 9.7%.

For the purpose of obtaining data from a sufficient number of cases to furnish material for a definite conclusion, Leary states that a fund was established through the munificence of public spirited citizens, by means of which he was enabled to furnish pneumococcus vaccine without cost to physicians in Massachusetts desiring to take part in the collective investigation of this product.

Especial attention was called to the following important points:

1. Early diagnosis. Do not wait for the appearance of rusty sputum.
2. Early administration of pneumo-bacterin. "Use the vaccine treatment the moment that a diagnosis is established. The function of vaccine treatment is to stimulate the immunizing machinery of the individual to react and produce substances (opsonins) which will influence the bacteria by preparing them for ingestion. The

patient plays an active part in the process, and if success is to be obtained must have sufficient resisting ability to react under the stimulation of the vaccine.

3. Necessity of full doses, 10,000,000 to 50,000,000, progressively increased in acute cases, every 4 to 8 hours. The negative phase is either ephemeral or absent.

4. Harmlessness of the vaccine treatment.

After receiving quite a large number of reports from the profession in various parts of the state, Dr. Leary changed his doses to 100,000,000 of killed bacteria once in twenty-four hours.

Willcox and Morgan³ state that they have treated 24 cases of acute pneumonia with bacterins. They administer 20,000,000 to 50,000,000 stock pneumococci as soon as the patient goes under treatment. After forty-eight hours, a second dose is given if it seems necessary. After this the autogenous vaccine is used if further doses are indicated. It was found best to decrease the dose as the patient approached the crisis, as he became more susceptible to inoculation at this time. In many instances there was a fall of temperature immediately following inoculation, and the dyspnea and delirium became less. The duration of the disease appeared to be shortened, the crisis occurring before the usual time in 6 cases. The temperature in 8 of the cases fell by lysis instead of crisis. The benefit was most pronounced in those cases which ran protracted courses.

MacDonald⁴, Martyn⁵, and Batten⁶, report excellent results from the bacterin treatment of pneumonia.

Coleman⁷ reported a case of unresolved pneumonia of 38 days standing. Two injections of 45,000,000 cocci each, given at an interval of ten days, brought about complete resolution.

Briscoe and Williams⁸ conclude that in the more or less acute conditions following lobar pneumonia, the bacterins cause marked improvement in the general condition.

Floyd and Worthington⁹ report a series of cases treated with bacterins.

Dr. George W. Ross¹⁰ stated that patients with pneumococcus empyema, sinuses, etc., have been successfully treated.

Jowers¹¹ reports a case of recovery from peritonitis, due to pneumococcus infection of the tube.

Dr. Helen Putnam¹² reports a case of abscess of the antrum of Highmore, from A. E. Wright's clinic, in which two inoculations at an interval of seven days, cured the condition entirely.

Beebe and Medalia¹³ report favorable results with the use of pneumo-bacterin.

Dr. Allen¹⁴ reports a series of cases in which bacterin treatment was used with success in treatment of diseases of the eye, one of the most serious cases being ulcer serpens corneae.

Goadby¹⁵, in an article on "Vaccine Treatment of Pyorrhea Alveolaris," states that he has treated 47 cases by pneumo-bacterins. Of these 36 were cured; that is, all the general symptoms cleared up, together with the local suppuration. Nine were relieved; that is to say, the general symptoms disappeared, although the local discharge remained.

Leary¹⁶, in an article on the bacteriology of pyorrhea alveolaris, states that he has studied about 100 cases of pyorrhea and has found a great variety of organisms, his most constant finding being the pneumococcus. Streptococcus was also frequently found, as well as staphylococcus, the latter, however, commonly associated with

the pneumococcus or streptococcus. Mixed infection often requires mixed vaccines, therefore he used in these cases stock pneumo-bacterin, to which a stock strepto-bacterin and a stock staphylo-bacterin had been added.

Medalia¹⁷ found about 90% of his cases of pure pneumococcus infection, with which staphylococci and streptococci are more frequently associated than any other organisms. The injections ranged from 30,000,000 to 150,000,000, combined with from 150,000,000 to 500,000,000 staphylococcus aureus bacterin. Thirty-three cases have been under treatment, 11 of which are entirely cured. Five of these have remained over a year without any recurrence. All the others have shown great improvement.

CONCLUSION.

It would seem from the above evidence that the pathological conditions resulting from an acute pneumococcic infection can be relieved, removed, or modified, by injecting subcutaneously killed bacteria of the species causing the diseased condition. The collective investigation now under way in Massachusetts is attracting the attention of the profession, and it is hoped that a verdict will be reached supported by sufficient evidence to make it conclusive.

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DIET IN PNEUMONIA.

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The attempt to make the theoretical science of dietetics practically workable at the bedside, brings us face to face with a series of apparently conflicting problems. This is especially true in connection with pneumonia as we shall see a little later on in this discussion.

Some of the apparent conflicting conditions can be made to harmonize materially, while in other instances, it seems almost impossible to secure a satisfactory solution of this all important question, to wit, how best to feed the patient both in health and disease.

There are certain factors, however, which must not be overlooked in connection with this interesting study of dietetics in the treatment of the acute infectious diseases.

The two primary factors are the patient and the food to be utilized by the system.

Taking up first, the patient, we must recognize as a primary fact, that every disturbance in metabolism of an acute

nature, is always preceded by a general lowering of the nutritive vitality. The next factor to be kept in mind is the fact that the general deterioration in nutritive activity must be followed by a localized lowering of the nutritive vitality in some organ or tissue of the body. In the acute or infectious diseases, this local deterioration must result in the establishment of a soil, presumably proteid in nature, that will sustain the specific micro-organism which produces the disease, as in the lungs in pneumonia. There is no question as to the necessity of the microbic influence in the infectious process. Just what part the micro-organism plays in the more chronic processes has not as yet been fully determined. This much, however, is true, that as an etiological factor its action cannot be so directly traced, nor the influence of diet so exactly followed.

In the acute process the micro-organism secretes directly a toxin, or by its growth within the tissues, so alters the oxidation reduction processes of the body, that various toxins are produced as the result of the imperfect transmutation of the proteid molecule. It is highly probable that the toxins are produced in both ways, hence the great complexity of symptoms encountered. From a practical dietetic standpoint it matters little how the toxins are produced, the poison is there, and acts as a pronounced disturbing factor to normal metabolism. It causes the symptoms, arrests glandular activity, and must be destroyed and eliminated before a cure can be effected.

As a natural sequence of this toxic condition of the system, the digestive functions are still further disturbed, and we are confronted at the very start with digestion at its very lowest ebb, a decreased con-

sumption of food, imperfect oxidation and an increased storage of heat within the body. This tends to destroy the very foundation upon which all repair must rest, the digestion and utilization of food, for medicine alone has no specific curative action.

Thus it becomes apparent at the very start of our dietetic treatment of pneumonia, that we have a very complex problem to solve. One which admits of a great variety of opinions. One which must vary with individual cases, and in accord with which one of the above etiological and pathological factors is playing the most important part.

Before attempting to outline the dietetic measures that will yield the best results in combating the above enumerated conditions, which relate directly to the patient, we must have a concise knowledge of the chemical composition, the digestibility and the caloric and nutritive value of the food stuffs that can be employed. We must know what can be accomplished with them under normal conditions. This accomplished we can direct their use with some degree of intelligence in connection with all pathological processes as well as in connection with pneumonia.

As regards their origin, all food stuffs are divisible into two general classes: vegetable and animal. These two are further divisible, chemically speaking, into four distinct classes, to wit: the inorganic which includes water and salts of various kinds; two classes of simple heat producing substances, one including cellulose, starch and sugar, the other composed of all kinds of fats; the fourth including the pure proteid and the proteid-like bodies, or the constructive, tissue-building protein compounds. For a still clearer understanding

of the subject, this fourth class is divided into two: one including the purely proteid substances, the other the proteid-like compound, to which an atom of iron and phosphorous is attached in its synthetic formation. This latter subdivision or fifth class, for convenience and a better comprehension of the subject, is classed as a hemoglobin- and lecithin-yielding one. This particular form of proteid-like substance is absorbed from the lumen of the alimentary canal into the enterohepatic circulation and conveyed to the epithelial cells of the hepatic gland, where it is oxidized into hemoglobin and lecithin, thus furnishing to the system these two much needed compounds. The hemoglobin thus formed replaces the daily loss, while the lecithin passes on to the nervous system, there to be oxidized in the protoplasmic masses constituting the nerve cells. When lecithin is oxidized in the nerve cells in this manner it yields heat energy directly to the cells of the central nervous system.

Outside the five classes here enumerated no others of importance are found in the food-stuffs.

Both the vegetable and animal foods contain these five essential classes, all of which are necessary for the maintenance of animal life. This being true, why is not one type of food just as available as the other? If it is not true, what advantage has one class over the other? These questions can be solved only by a close comparison of the relative proportions of the five classes as found in the two primary divisions, taken in conjunction with the demands of the physiological economy for these five different groups of substances. Chemico-physiologic investigation has demonstrated that a certain amount of each of these five classes must be supplied daily to insure the

best nutritive results. Water and salts, a sufficient amount of the purely heat-producing compounds, a certain amount of tissue-building or pure proteid material and the requisite quantity of hemoglobin- and lecithin-yielding material must be supplied. All this must be accomplished and still keep well within the oxygenating capacity of the system. In this connection it is well to note that, in health, nature permits a quite wide latitude between the possible intake of food and the oxygenating capacity of the animal economy. Were this not so, it would be impossible to maintain a perfect state of health. In connection with disease, however, this latitude between the intake of food and the oxygenating capacity of the system is often reduced to a very dangerous point, so much so, that it becomes one of the exciting factors in the maintenance of the pathologic process. Even with the largest possible latitude between the intake of food and oxygen supply, neither the vegetable nor animal diet alone, so far as composition is concerned, is absolutely perfect. The latter, however, so far as the human economy is concerned, is more nearly perfect than is the vegetable class, as we shall see a little later in our analysis of the two.

Looking a little more deeply into the exact and comparative composition of the two classes it will be found that the vegetable class contains less water than the animal, while the salts are more evenly distributed between the two. The vegetable class contains a very high percentage of cellulose, starch and sugar, or glucose-forming elements; while the animal, excepting milk and its derivatives, is absolutely deficient in this respect. The vegetable class contains a very low percentage of fat, while the reverse is true of the animal

foods. In the purely proteid group it is pretty evenly abundant in both classes. If there is any advantage as to quantity, taken as a whole, it will be found in favor of the vegetable class. With the fifth or hemoglobin- and lecithin-yielding group the advantage is largely on the side of the vegetable class of foods; in fact the animal class is deficient in this respect.

Having found these five classes in both the vegetable and animal foods, the next question is what are the requirements of the system as to the exact amount of each of these groups to maintain the highest grade of nutrition? Careful observation and close study of the chemistry and physiology of the animal economy seem strongly to indicate the necessity for a continuous and quite uniform supply of each of these five classes to secure and maintain the best nutritive activity. This applies particularly to the last four classes, the glucose-forming, the fats, proteids, hemoglobin- and lecithin-yielding substances. If anything, it is more important with the last two of the four than with the first two; they being tissue builders, while the others are only heat producers. How the first three of this group of four—or the glucose, fats, and pure proteids—shall be proportioned, is the all important question.

If we turn to nature and the composition of milk, it will be found that the three are quite near together in percentage amounts, but with a slight preponderance in the glucose column. This correspondence is so near, taken in connection with the marginal latitude of deviation between the food intake and oxygen supply as allowed by nature, and the proportionately larger liver in the child, that milk furnishes an almost perfect diet. Further than this, it should be taken as indicating that these three

groups should stand in all dietaries in pretty close percentage relation to each other during health and disease if the best nutritive results are to be secured. This is especially so in connection with chronic diseases in which there is a low oxygenating capacity from any cause, and is further indicated by the necessity for resorting to a milk diet in the treatment of both acute and chronic diseases.

In my experience, the exact amounts of the three classes of food-stuffs which have given the best results are as follows: pure proteids 150 grams, fats 105 grams, glucose-forming elements 135 grams. Total, 390.

The above amounts, when fully oxidized within the body, yield 2145.15 large calories, and this is accomplished with a saving of twenty per cent. in the oxygenating capacity of the system.

With this understanding of the percentage composition of the food-stuffs, well illustrated in the comparative table of food-stuffs, and knowing the daily requirements of the animal economy as to heat production and proteid intake, our dietary is best classified, primarily, as purely vegetable or purely animal; neither one of which, as we have already seen, conforms absolutely to the requirements of chemico-physiology as understood today. The animal class, however, as already shown, comes very close to perfection, so much so, that it is the only supply during intrauterine life and also during the first few months of extrauterine existence. Owing, however, to deficiency of hemoglobin- and lecithin-yielding elements in all animal foods, some form of vegetable compound which contains a higher percentage composition in this respect, must be added to the dietary just as soon as the digestive system has acquired

sufficient strength to accomplish the more difficult task of digesting and assimilating food derived from the vegetable kingdom.

Again another radical difference between the two primary classes is encountered, one that is of vital importance in connection with the management of chronic diseases and should never be lost sight of in study of the economics of diet. This is true also in a large measure in the more acute processes and even in perfect health. The vegetable class is so constructed in its synthetic formation that it is very difficult of digestion, while all animal substances are easy of digestion. The difference is so great that from 16 to 80 per cent. of the vegetable foods pass through the alimentary canal undigested, while with the animal foods the loss ranges between 2 and 9 per cent. From this fact alone, it is easy to understand the greater economic value of the animal as against the vegetable class. It shows also why eating too abundantly of animal food is followed by conditions of suboxidation, especially if there is lowering in the oxygenating capacity. At the same time it has been proved conclusively that neither class is absolutely perfect in all respects for general use during the whole period of human life, that is, if the aim be to secure the highest results both mentally and physically. While it is true that some animals are so constructed that they can handle to better advantage vegetable foods than is the case with other species, it is not true that man can digest vegetable food easier than the animal class. Therefore, between these two extremes there will naturally be found two other forms of dietaries, one which deserves to be classified as a well regulated or ideal mixed diet, the other an imperfectly regulated diet, in which

the vegetable and animal class are less perfectly adjusted. (See diet table).

FOR AN ABSOLUTELY RESTRICTED DIET.

Buttermilk, skimmed milk, or milk, or some of the fermented milks (kumyss, zoolak, kefir, sumal). Beef tea, bouillon, and plain mutton, chicken, clam or oyster broth.

AN IDEAL MIXED DIET.

For Breakfast. Two eggs, eight ounces of milk, two ounces of wheat bread and butter.

For the Mid-day Meal. From one-quarter to one-half pound of beefsteak, eight ounces of milk, three ounces of wheat bread and butter.

For the Night Meal. From one-quarter to one-half pound of beefsteak, eight ounces of milk, two ounces of bread and butter.

At Bed Time. Eight ounces of milk. Beefsteak is taken as the working standard among the meats, as it is the most easily digested of all food stuffs. Under the heading of meat is included lamb, mutton, occasionally veal; all kinds of fish, including the shell forms, such as oysters, clams, lobsters, and crabs; poultry and game of all kinds.

The meats to be broiled, boiled or baked.

The fish to be boiled or baked.

The oysters and clams to be eaten raw or stewed. The lobsters plain boiled.

A little crisp bacon may be taken from time to time, also ham and corned beef, WITHOUT CABBAGE.

Eggs may be taken boiled, poached or scrambled.

The milk is best taken warm or with a little lime-water added.

Wheat bread is taken as the standard because it is the most easily and perfectly digested. It should be at least twenty-four hours old or toasted; rye, graham, zwiebach, or the health food breads may at times be substituted.

Weak coffee, without milk or sugar, or with a dash of milk, may be taken freely

as a beverage. Coffee taken clear aids digestion, but with milk and sugar often disturbs digestion.

ADDITIONS TO ENLARGE THE ABOVE DIET.

In the line of vegetables: string beans, green peas, lima beans, spinach, lettuce, asparagus, and cauliflower. These are chosen because they are the least likely to excite intestinal fermentation of an abnormal character. They should be well cooked, and only one vegetable at a meal.

When a vegetable is taken with the meal there must be a reduction in the quantity of meat or milk as given in the above table.

To the above may be added boiled rice and macaroni, and occasionally boiled beets.

FOOD STUFFS TO BE AVOIDED.

All fruits, either cooked or raw; all cereals and breakfast foods, nuts, sweets and pastry of all kinds, potatoes in all forms, onions, tomatoes, turnips, parsnips, carrots, celery, radishes, cabbage, egg- and oyster-plant, corn, etc.; pork in all forms, except as before stated. Rich gravies, and all forms of soup are excluded. The latter, first, because they tend to destroy the keen appetite which makes possible the eating of plain and substantial food; second, because they destroy the appetite and stimulate a strong desire for the entrements and highly seasoned foods; and, third, because the mixed, cream and rich stock soups tend to excite undue and putrefactive fermentation in the intestine. Rich gravies, because they disturb digestion.

Potatoes, that are so commonly used, are excluded for three reasons: first, because they have a high percentage of starch and a low percentage of proteid; second, because they are so apt to be taken three times daily, and are so often eaten fried; third and chiefly, because of the ease with which the starch contained in the potato is digested and assimilated within the system. In consequence of this rapid utilization of the potato starch, which yields to the animal economy only heat, the oxygenating capacity of the system is exceeded, and there is not a sufficient amount of oxygen left within the body to perfectly oxidize and assimilate the proteid constituents of the

food that must be accomplished if a perfect state of health is to be maintained. In the repair of the diseased conditions it is still more necessary that the proteids shall be perfectly oxidized and assimilated, hence the absolute necessity to exclude the potatoes and food products enumerated.

Fruits are excluded, first, because they are usually picked before they are fully ripe; second, because they are in a state of partial putrefaction, and are often covered with bacterial life when eaten, and often taken in excessive quantities. Having reached the alimentary canal in this state, they excite undue and putrefactive fermentation of proteid constituents contained within the intestinal canal and thus prevent the perfect digestion and assimilation of the proteid elements of the food.

When these rules are followed a good variety in the dietary can be secured, and a high grade of nutrition established and maintained. Disregard of these rules will sooner or later result in disease of one kind or another.

The close adherence to these rules, with suitable medication, will result in the cure of many a diseased process, which otherwise will make life miserable and ultimately cause an untimely death.

The ideal mixed diet of the author is so adjusted that it contains the requisite percentage of the five classes supplied in the most easily digestible and assimilable form possible. It furnishes the requisite amount of heat production equally distributed between the hepatic and pulmonary circuits to bring about a harmonious and automatic balance of action between innervation and inhibition of all parts of the body, thus producing perfect physiologic action in this respect; it supplies the requisite amount of pure proteid material for tissue construction and regeneration; it supplies the full amount of hemoglobin- and lecithin-yielding material, all of which is fully accomplished well within the oxygenating

capacity of the system. This form of diet is best secured by preponderance of the animal class and by keeping the vegetable class well in the minor quantity. The less perfect mixed diet is one in which the reverse is true. This latter form is often spoken of as a vegetarian diet, implying thereby that vegetables only are eaten; but a truly vegetable diet must exclude absolutely all animal foods, even in the process of cooking. In like manner, the animal diet must absolutely exclude all substances of a vegetable nature. It is the loose manner in which these terms are used that has led to much error in the discussion of this very important subject, and hence many of the deductions have been erroneous.

From the foregoing it is but just to argue that a well regulated or ideal mixed diet must yield the highest grade of nutritive activity, both in health or disease, be the latter either acute or chronic.

In connection with the acutely infectious and highly toxic processes still another subdivision of the results that can be obtained from the foods utilized will make the elucidation of dietetic treatment still more simple and easily workable. As for instance a division into two classes, heat producers and nourishing furnishers. Or we may speak of them as those having a high caloric value and low proteid value, or vegetable class. Or those having a high proteid and a low caloric value, which is characteristic of the animal class.

With this fundamental knowledge of dietetics we are in a position to secure the most valuable diet in the treatment of pneumonia or any other disease.

In pneumonia the first thing to be considered and overcome from a dietetic standpoint is the lowered nutritive activity prior to, during the development and

progress of the acute process. Later on the convalescent stage must be considered.

In all conditions where there is a general lowering of the nutritive processes, the natural call is for a higher supply and utilization of the proteid elements, with the development of a sufficient heat production to yield the caloric energy required to utilize the proteids, and maintain the various activities of the system. Such a result is best accomplished by a slight enlargement of the ideal mixed diet already given. Just at this point, however, we are confronted by a decided inability of the digestive system to perform even the normal amount of work. To which must also be added a lowering in the oxygenating capacity of the system due to a blocking out of a part of the air space by the pulmonary inflammation. Therefore, such a diet cannot be instituted, and we are forced to fall back upon a very limited diet and one wholly liquid in character, composed of milk, eggs, and broths of various kinds. The milk can be used, plain, predigested, or variously fermented as the exigencies of the digestive system demand. These should be administered in small quantities at short intervals, but in as large amount per day as the digestive system can perfectly handle. Great pains must be taken not to exceed or overtax the enfeebled digestive powers, for a little food well digested is far more valuable and less detrimental to the system than larger amounts imperfectly transmuted at the same time. The main object throughout the whole course of the disease is to raise the intake and utilization of proteid material as nearly up to or a little beyond the normal standard as possible. A diet of this composition naturally has a low caloric value, hence the absolute necessity

for the use of some alcoholic preparations as heat producing food substitute.

Under conditions of this kind alcohol becomes a very valuable substitute food, because it can often be taken up and oxidized in the epithelial cells of the alimentary tract without the expenditure of any digestive energy. When this is the case, it yields directly, but in an artificial manner, the heat energy which must be supplied to the system if life is to be maintained during the progress of the infectious process, or until nature can throw off the damaging effects of the toxemia. To secure the best results the alcoholic food must be given at short intervals and in such quantities as will make good the loss of caloric value from the normal food products.

This accomplished we have secured the highest grade of nutritive activity compatible with the abnormal conditions of the system. In some instances, even under these theoretically perfect dietetic conditions the patient is progressively growing worse. This is explained by the fact that this highly proteid diet of the animal class, permits an undue amount of putrefactive fermentation in the alimentary canal. At the same time it often supplies the system with so much active proteid material that the culture medium in which the bacteria thrive is augmented and their growth and toxic activity is intensified. This is evidenced by the higher temperature and greater restlessness. Changing the diet to one composed largely of the vegetable class, as the meal gruels, and vegetable broths, at once lowers putrefactive activity in the intestinal canal. It also greatly reduces the protein supply to the system and augments its caloric value. This has a decided tendency to decrease the richness of the

culture medium in which the bacteria thrive, lessens bacterial activity and the toxicity of the system and by the heat energy obtained through the oxidation of the starches and sugars augments glandular activity. Thus by shifting from a food of high nutritive and low caloric value to one of an opposite nature the desired results can be attained from diet alone. By this it is not to be inferred that alcoholic preparations as food are to be ignored. Neither does it exclude medication in the management of these cases of inflammations of the pulmonary organs.

The main object of this paper has been to call attention to the methods by which diet alone can be made to modify pathological processes, and to point out the differences in the condition of the patient that may call for a change in the composition of the diet.

Owing to the greater ease of digestion and the higher nutritive value of the animal class, this class is more frequently called into service than is the vegetable class alone. Owing to the lower nutritive, and higher caloric value, and antebacterial influence, the vegetable class can often be utilized to great advantage. Great skill must be exercised, however, in changing from one class to the other lest nutritive activity be allowed to fall to too low an ebb, and the heart muscle be starved to death.

Having passed the critical point and reached the stage of convalescence, the diet must be brought back as rapidly as possible to a soft, or semi-solid diet. The latter to include cooked eggs, soft toast, and the lighter meats, until finally the well regulated and ideal mixed diet is again fully established. A diet which will furnish the full quota of constructive material, the requisite heat production rightly pro-

portioned between the proteids, fats, starches and sugars. This accomplished a perfectly normal state of the physiological economy must follow, assuming that the system can perfectly utilize the same.

PNEUMONIA AS A POST-OPERATIVE COMPLICATION.

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We older surgeons all remember when erysipelas, pyemia and tetanus were common complications, darkening the path of the surgeon.

When aseptic surgery gave us a lighter path, we concentrated our fears upon the subject of shock. The subject of shock was studied, understood, managed. Having cleared the way so far, we began to note a post-operative complication standing out prominently, for the reason that it had been previously obscured by the abundance of other accidents. This complication was post-operative pneumonia. There are few complications after surgical operations which take the surgeon off his guard, or bring disappointment, more distinctly than pneumonia. It is apt to appear quite unexpectedly at a time when the patient may be starting off well after a properly conducted operation, and always introduces an element of anxiety.

The surgeon who reduces his death rate one per cent. year after year is now acutely interested in this last frequent complication which is to be eliminated in large part by his efforts. That it is a matter largely within his power is indicated by the steadily decreasing proportion of post-operative

pneumonia cases, due incidentally to our refinement in operative technic, although the cause and effect relationship between pneumonia and such technic is not always kept in mind for purposes of report.

It is somewhat difficult to get statistics showing the proportion of post-operative pneumonia cases, because authors are apt to make separate classification of end results, under a nomenclature which does not lead us to remember that these cases belong among the pneumonias at some stage. For instance, Biberzeil reports somewhat over three per cent. of pneumonias after 3,909 operations of various kinds. Of these pneumonias, 10 were lobar, 98 lobular and 27 hypostatic. He did not include among the pneumonias, cases of larger embolism and abscess, but grouped them along with the pleurisies and empyemas. Albanus found two per cent. of pulmonary embolism after laparotomy in 1,140 cases. Most of these cases would belong to my simpler classification of lobular pneumonia. American authors have been especially prone to bring in confusion, by classifying post-operative pneumonias as "ether pneumonia, pulmonary embolism and infarction, pulmonary abscess, pulmonary gangrene," and so on. Czerny reports four per cent. of post-operative pneumonia in 1,300 laparotomies, while Trendelenburg finds five per cent. Henle divides 48 cases of post-operative pneumonia into 7 acute lobar, 24 of bronchial pneumonia and 17 of gangrene. Kuemmell found 29 pneumonias after 1,070 laparotomies, of which 8 were lobar and 21 lobular.

It will be seen that the classification by Kuemmell placing lung complications under two kinds of pneumonia simplifies matters very much, but I would add hypostatic pneumonias to the group.

While the pneumococcus is the pathogenic bacterium in lobar pneumonia, we may find it present in the lobular pneumonias also, but not as the dominant species. Friedlander's bacillus, streptococci, and colon bacilli are commonly dominant species in lobular pneumonia. Lobar pneumonia appears so shortly after operation in some statistics that it leads to the suspicion that operation has sometimes been done for some abdominal condition where the surgeon was led astray by the early abdominal symptoms of pneumonia. These sometimes appear in advance of classical later symptoms, and we must be on guard against including such cases of pneumonia in the post-operative group. Symptoms referable to the appendix region as an early symptom of lobar pneumonia, are common, and I once operated in such a case, and have heard of many other cases subjected to operation at this stage. Personally I have been trapped but once so far as operation was concerned, but since that time have seen a number of lobar pneumonia cases in which one might readily believe that some abdominal condition was calling for immediate surgical attention. Cases of incipient lobar pneumonia with abdominal symptoms, can now be differentiated from appendix cases I think, by the testimony offered by hypersensitiveness or absence of hypersensitiveness on deep pressure at the site of the right group of lumbar ganglia.

Lobular pneumonia usually comes on so much later after operation than lobar pneumonia, that it is frequently overlooked in its early insidious stages.

It is the conviction of some authors that true lobar pneumonia, occurring after operation, is merely a coincidence. While it is relatively infrequent, it occurs too often to

allow me to believe that some of the cases are not dependent upon the operation, and for a reason which I shall state in connection with notes on lobular pneumonia.

Hypostatic pneumonia we may dispose of in a very few words in this particular article, because we know so well when to anticipate its occurrence, and the factors which contribute toward its development are not open to much question.

Lobular pneumonia is the form of pneumonia which we see most often after surgical operations, and this is the particular form usually carried in mind when the term "pneumonia" without qualification is used.

The predisposing factor which to my mind stands first among the causes for both lobar and lobular pneumonia after operation, is not the one which is found described by authors. My idea is that the lowering of the patient's general resistance by unnecessarily prolonged or severe operations, and undue length of time expended under an anaesthetic, take first rank among predisposing causes. When aseptic surgery allowed us to move rapidly ahead in operative work, we were not aware of the moment when we passed the pivotal point, and met the law of diminishing returns. We met the law of diminishing returns, when, feeling safe in our principles of aseptic surgery, we deliberately expended more time than was necessary in order to make ideal completion of operations. Let us stop a moment to think about this. We assume that the pneumococcus of lobar pneumonia and the varied bacteria of lobular pneumonia are practically omnipresent, and ready to form active colonies at any time when conditions are right. Anything which lowers the resistance of the individual to infections in general will

lessen his resistance to these bacteria in particular. Cantacuzene showed us that guinea pigs subjected to the influence of alcohol or opium, quickly perished from infections which at the same time were resisted by another lot of guinea pigs, which were not under the influence of these drugs. Ether is closely related to alcohol, and we may infer that it temporarily lessens the resistance of patients to infections which may begin in an hour under favorable circumstances. Prolonged operations, and operations with long incisions and much handling of viscera, lower the resistance of the patient for the moment, and through the influence of shock may prevent him from carrying on the normal physiologic process of manufacturing phagocytes and antibodies sufficient for meeting infection subsequent to operation. The deduction which I make is this, if we operate as expeditiously as possible, and reduce our operations to fifteen minute operations when that can be done without jeopardizing any of the patient's interests, we shall have much less post-operative pneumonia of any sort to deal with. This has certainly been my personal experience.

Authorities are inclined to place age in first position as a factor predisposing to pneumonia subsequent to operation, and I will not ask the profession to accept promptly the factors which I have placed first. Pneumonia appears after abdominal operations more often than after any other one class, and Kelling has shown that a man seventy years of age is nearly five times as prone to develop pneumonia after laparotomy, as a man between the ages of twenty and forty. This is quite in line with my theory of lessened resistance standing first however.

Kelling states that men are more predisposed than women to this complication, because of the relationship between pneumonia and alcoholism, arteriosclerosis, cardiac weakness, persistent bronchitis and emphysema, and sexual differences in type of respiration.

Authors have had much to say about the influence of narcosis upon the production of post-operative pneumonia, but this complication has been reported as occurring after operations done under local anaesthesia so frequently as to bring again under consideration my belief about the influence of lessening resistance temporarily by any major operation whatsoever. It is quite true that general anaesthetics are all more or less irritating to the bronchial mucosa, and patients who have bronchitis at the time of operation are especially disturbed by ether. To meet this seemingly added danger, however, we have the fact of protective local hyperleucytosis. It has already been called out by the presence of an established bronchitis.

Post-operative vomiting we know to be a factor in the production of pneumonia, because mucus, or more irritating substances, are often aspirated by the patient.

Deep aspiration of fresh bronchial secretion is often a factor.

While the more volatile anaesthetics have a greater refrigerating effect upon the mucosa of the bronchi, it might be a question if the temporary congestion such refrigeration causes might not furnish protection in line with the theory of Bier, unless bronchitis progresses later.

Where pain after operation limits the full range of the muscles of respiration, pulmonary stasis is favored, and varied forms of pneumonia may result.

Local congestion of the lower lobe of the right lung with more frequent occurrence of the development of pneumonia on the right side, may be due to the weight of the liver of the patient in a recumbent position.

Patients whose general resistance is lowered by alcohol or other drugs, or by such a disease as cancer, are particularly apt to develop pneumonia after operation, and this again is in support of my idea of the prime factors.

Direct infection of the lungs by the varied bacteria may occur in three channels; by way of the mucous membrane, the blood vessels, and the lymph vessels. It is not necessary for the mucus from the bronchi to be infected in order to be dangerous, for recently-formed sterile mucus aspirated into small tubules may cause atelectasis of lobules, and that part of the lung then becomes less resistant to infection arriving by way of the lymph and blood vessels.

One reason why pneumonia follows abdominal operations more often than in any other class, is because of the tendency to pulmonary stasis and retention of matters which would be expectorated, were expectoration not so painful. After abdominal operations there is also a tendency to more vomiting, with resultant aspiration of fluids, because we disturb the great vasomotor centers profoundly by almost any sort of work within the peritoneal cavity.

Jonnesco believes from his statistics that spinal anaesthesia according to his method, distinctly lessens the tendency to aspiration pneumonia, because the conscious patient guards his larynx beside avoiding excessive bronchial secretion due to anaesthetics. This feature of spinal anaesthesia is one to which we may properly give serious consideration.

Embolic pneumonia by infection from the blood stream is perhaps more common than is generally supposed, and in this connection I wish to present an additional theory to account for the frequency of pneumonia after abdominal operations. Experiments made with Petri plates in the operating room show that vast quantities of bacteria are being carried into the peritoneal cavity every moment that it is exposed. We know that the peritoneum may almost rival the skin in its ability to resist infection, and yet these bacteria entering the open peritoneal cavity must be disposed of somewhere.

Most of them, no doubt, are destroyed in the customary way by the body cells of the patient, and yet I cannot but feel that many of them are carried quickly to the lungs. If these lungs have been rendered non-resistant by the effects of the anaesthetic, shock of the operation, and the mechanical features resulting in stasis after operation, the patient may have pneumonia, which we did not fear, in place of the peritonitis which the older authors at least would have feared. One does not realize how many bacteria fall into an open peritoneal cavity, unless he is familiar with the culture experiments made in the air of the operating room, and he does not realize how little harm bacteria may do in the peritoneal cavity unless he remembers the work of Tait. In order to have the smallest number of air bacteria in the peritoneal cavity, however, we ought to work as rapidly as possible, in order to avoid the action of bacteria which rarely cause peritonitis, but which may frequently cause pneumonia. This is a theoretical statement only, but I am personally so well convinced of the possibilities of these bacteria for

distant harm, that it forms one of my reasons for doing the most expeditious work possible without sacrificing the patient's interest, whenever the peritoneal cavity is opened, and exposed to the air bacteria which are certain to float in.

It is a question if we have at the present time sufficient knowledge to allow us to discriminate nicely between aspiration pneumonias, pneumonias due to general loss of resistance, and pneumonias from minute embolic colonies of bacteria, although we can distinguish certain types of embolic pneumonia where the emboli are large.

Embolic pneumonias have been for some time recognized as belonging to the class of cases in which we have infection in the peritoneal cavity already established at the time of operation, and they are particularly apt to follow acute infections with exacerbation following operation. This is probably due to the escape of emboli before the veins have had time to protect themselves well with fixed thrombi.

Among the predisposing causes to pneumonia, a good deal has been said about exposure of the patient to cold during the time of operation, and some surgeons have made a point of warming the operating table, and asking the nurses to be particularly watchful in guarding the patient against undue exposure. This is highly commendable on general principles, for when we have rendered the patient helpless for a period we assume a responsibility in more ways than one, but it is my personal belief that the patient under an anaesthetic is quite as irresponsible to the influence of cold as he is to the knife. Patients while coming out from under an anaesthetic, however, may throw off the bed clothes while their underclothing is moist with perspira-

tion, and at this period the danger from exposure to cold is no doubt real.

A form of pneumonia commonly called pleuro-pneumonia frequently follows operations upon the liver and gall-bladder when infection is present at the time of operation. It is probable that infection is transmitted by way of the lymphatics through the diaphragm to the pleura, and the neighboring lung is engaged in an infection which may develop into pneumonia of the lobular type, but which I more often classify among the consolidations occurring by transmitted infection, and not belonging properly to the pneumonias.

In relation to the question of prophylaxis, this article has already stated what I believe to be the most important points, but there are other measures for prophylaxis against post-operative pneumonia which may be brought to bear. We frequently have cases in which it would be advisable to postpone operation until the patient could be gotten into a better state of general resistance through medical treatment in advance of operation. For instance, if the patient were to have an acute tonsillitis at the time set for operation, it would be advisable, other things being equal, to postpone the operation until danger from aspiration of very active colonies of bacteria had been lessened. Fowler's position has been advocated as lessening the danger from post-operative pneumonia after abdominal operations, and probably on a good basis of reasoning. The matter of keeping the patient upon the left side as much as possible after an operation, would seem to have the tendency to lessen the right-side stasis of the lung which is actually shown by statistics to be a common starting point for pneumonia.

The work of the physician and surgeon is so closely related in this question of post-operative pneumonia that he is a fortunate surgeon indeed whose medical training has been sufficient to teach him whom to call in consultation; and it is a fortunate physician who has had enough surgical training to know at what time a surgical operation may best be performed.

There is no particular treatment for post-operative pneumonia that I would wish to present. I do not look after this part of the case myself, but leave the treatment to internists on the hospital staff, or to the family physician in private practice, all of whom have so many ways of rendering service that I have not detected any special principles which might be formulated.

The matter resolves itself into the general proposition that post-operative pneumonia will occur much less often at the hands of physicians and surgeons who comprehend the whole subject, than at the hands of surgeons who have in mind nothing beyond the necessity for doing some operation which seems to be required from a purely surgical point of view. "The simple operation" is something which is seldom referred to as such by any surgeon who has been long in the field of practice.

PNEUMONIA IN THE AGED.

BY

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Probably no disease associated with senility gives rise to a greater number of surprises than pneumonia. Many a man

who appeared in his usual state of health, save perhaps that he complained of lassitude, has gone to bed without medical attention and in the morning has been found dead. Post mortem examination has frequently revealed a pneumonia entirely unsuspected.

The reason is not far to seek. In the first place, among the peculiarities of pneumonia in the aged are its insidious onset, the frequency of pneumonias showing only a slight rise of temperature, and even pneumonias that have subnormal temperature throughout their entire course. The rapidly fatal results are of easy explanation. The arterio-sclerosis, the fibro-myocarditis, the interstitial degenerations of the kidneys, taken in conjunction with impaired nutrition give a ready explanation for its great fatality. And, granted, that the patient survives, the marked peculiarity at this point lies in the fact that the pneumonia has not the tendency to recover as in the young adult, but to extension and this extension is probably due to an obliteration of the lymphatics so that the exudate is absorbed with difficulty, and as a result we have forms of inflammation that result occasionally in abscess and gangrene. The classical chill is very frequently absent, the reason being that on account of the lowered vitality, the insult of bacterial invasion does not give rise to reaction. And thus patients who come under the care of a physician frequently complain of little beyond malaise, or perhaps mental depression. At other times, a disturbance which the patient readily attributes to disturbed digestion resulting from unusual or improper food, is the only complaint. Rarely indeed are the symptoms of abdominal distress so great and the localization in the lower right quadrant so pronounced that

appendicitis has been considered, and it is not unheard of that the symptoms have been misinterpreted and the abdomen opened only to find the appendix in an atrophic condition so common in old age. Or a profuse diarrhoea may be almost the only symptom when the morrow demonstrates the existence of an extensive pneumonia.

The pneumonias of the aged are far more markedly septic than in early adult life, and not only that, the proportion of basal pneumonias, which are septic, is beyond what we expect. Granted that the diagnosis has been established, in determining the seat of the pneumonia, the observations of Hourman and Deschambre, first published in 1835, should be borne in mind. The first type of the senile lung they describe as follows: "In muscular persons with a well formed thorax, not much altered by the ravages of age, the lungs present little apparent difference from those of the adult except in the altered position of the great interlobular fissure. The degree of this alteration corresponds with the extent of lateral flattening resulting in diminution of the transverse diameter of the chest. In the adult this fissure lies immediately beneath the upper lobe and passes obliquely to the right of the lungs so that on the right side the central lobe occupies exactly the middle part, and in the left side has the lower lobe immediately beneath it (the fissure). But in the aged the fissure approximates to a vertical direction so that one lobe in the left will be directly in front and the other behind, and the middle lobe in the right lung projects downward and the lower lobe becomes elevated behind so as to form the posterior four inches (or more) of the summit of the organ."

The significance of this condition lies in the fact that a pneumonia which may be entirely at the apex so far as its position is concerned may really be situated in the lower lobe of either lung. Further, the calcification of the costal cartilages, the weakness of the auxiliary muscles of respiration render expectoration a difficult problem.

Then so far as the lung condition itself is concerned, the atrophy of the constituent elements of the tissues, the progressive infiltration into certain tissues of organic, either fatty or albuminous, material or mineral (calcareous) elements foreign to their normal condition, and the exaggerated production of connective tissue result in a lung in which the circulation is sluggish. Then added to this we have fatty degeneration of the alveolar walls resulting in perforation, the capillary blood vessels being thus deprived of their nourishment, atrophy, and the blood supply, is diminished in its fibrous tissue. As a result sclerosis is common, so that the problem in senile pneumonia is one of an acute infectious disease in tissues already the site of degenerations and atrophies. And when this occurs, as it does in a person whose general vitality is lowered, a high death rate is to be expected.

Expectoration as a rule is scanty but characteristic. When expectoration is profuse, it is usually in those subjects who have previously suffered from a senile bronchorrhœa or bronchitis and is not characteristic in color or consistency.

The problem which the physician has to deal with is, first, to carry the patient through the shock of infection, and a patient so enfeebled that none of the defensive mechanism of the organism is likely to be brought into play.

To stimulate the heart there is probably no better remedy than ammonium carbonate in five or ten grain doses, each dose administered in two ounces of milk every two to three hours. In this way the patient can be carried through the few days before the ammonium disturbs the stomach.

At longer intervals, strychnine either the sulphate or nitrate in unusual doses, say 1/20 gr., preferably given hypodermatically, every three hours, may mean recovery of the patient where less vigorous stimulation would yield a fatal result.

The patient is not likely to develop any defence against his bacterial invasion, therefore an artificial aid at once becomes necessary. That is found in creosote carbonate 30 minim doses every two or three hours, which is safe up to the period when resolution takes place. Ordinary creosote should not be given to the aged on account of the facility with which it produces irritation of the kidneys, even resulting in epithelial and blood casts and free blood.

The diet must be nutritious and in small amounts, for with the already over-taxed heart and the possibility of gastric irritation from the ammonium carbonate, albumins are best chosen. These must be ones easily digested in the stomach or pre-digested of which several varieties can be found in the market. Or egg albumin artificially digested up to six to eight ounces in the twenty-four hours. A large quantity of liquid is inadvisable. First, on account of the heart; and, second, on account of the distension of the stomach causing embarrassment. The quantity of milk taken is limited to that which is necessary in the administration of ammonium carbonate. The creosote treatment will obviate tympanites, which in the aged proves a most embarrassing complication.

The bowels are best moved by a concentrated enema of two ounces of magnesium sulphate dissolved in two ounces of boiling water which is allowed to cool and an ounce of glycerine added. This should be administered through a rectal tube at least eight inches into the bowel.

The room should be kept at a moderate temperature, the air carefully changed and kept dry, not the dry dusty air of a furnace heated room, but preferably an open fire. In case the weather is rainy or the atmosphere damp, a saucer containing strong sulphuric acid or a few ounces of exposed calcium chloride will dry the air sufficiently.

External applications as poultices are usually troublesome, and the results indifferent.

The temperature should be carefully watched. If following subnormal or a slightly elevated temperature there occurs a marked rise, a metapneumonic pleurisy should be suspected. If later the temperature becomes irregular, pulmonary abscess or even gangrene should be borne in mind.

Most of the pneumonias of the aged are practically free from pain, but if pain be noted, opium and all of its alkalies except one, codeine, should be avoided.

Expectorants in pneumonias of the aged are usually not required and theoretically are objectionable, inasmuch as most of the pneumonias of the aged come to an end through absorption rather than expectoration, the crisis is not looked for, but rather a steady lysis.

In a word, any unusual symptoms in the aged call for thorough investigation and most careful physical examination. Having determined the pneumonia, active stimulation, careful feeding, vigilance during the protracted period of convalescence and above all the avoidance of depressants and

the absolute prohibition of opium in all its forms save the one exception noted above.

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MENINGITIS COMPLICATING PNEUMONIA, WITH A REPORT OF CASES.¹

BY

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Pneumonia, with cerebral symptoms, is quite common in children, particularly in the beginning of the disease, formerly it was thought that meningeal symptoms were associated with apical pneumonia only. This has been denied by careful observers. It is not likely that the initial cerebral symptoms are due to the effect of pneumococci, or their toxins on the central nervous system; because the cerebral symptoms are only introductory and in the majority of cases disappear with the appearance of distinct pulmonary symptoms.

They may perhaps be attributed to the rapid rise and continued high temperature which causes a hyperaemia of the brain. Convulsions, also, may develop in this manner, in cases of special predisposition, as it is common in neurotic families.

Fraenkel's diplococcus is not the cause of croupous pneumonia only, but may at times travel to other regions and cause pleurisy, pericarditis, endocarditis, peritonitis and nephritis. It invades also the joints, middle ear, or the parotids and lastly the meninges.

The following cases are very interesting:

CASE I. Eleven months old. Suddenly became ill with a severe attack of pneumonia and marked nervous symptoms. Made a complete recovery on the tenth day. Had a relapse on the eleventh day with

high temperature, frequent respiration, unconsciousness, restlessness, an upward rolling of the eyes, and rigidity of the neck, back and extremities.

Symptoms persisted until admission to Beth Israel Hospital on the 16th day of disease which was June 5th, 1908. Child then came under the personal observation of Dr. Hymanson and was in a marked prostration with distinct symptoms of lobar pneumonia at the right upper lobe, anteriorly and posteriorly. T. 104, P. 140, R. 52. Ears and mastoids were negative, pupils reacted sluggishly to light, there were no changes in the fundus of the eyes. Reflexes were exaggerated. There was marked rigidity of the neck, and the entire voluntary muscular system was in a state of spasm.

A lumbar puncture was made on the following day, and 4 c.c. of turbid fluid under tension was obtained, in which distinct pneumococci were demonstrated. The pneumonia and meningeal symptoms persisted for the next three days and on the fourth day, clonic convulsions at regular intervals began and lasted until the following morning. They were more marked on the left side of the body. The child did not respond to any treatment, gradually sank, and died on the 23rd day of her illness. No autopsy was obtained.

CASE II. Fr. T., 18 months old, was admitted to the hospital on June 18, 1909. The family and personal histories were negative. The present illness began four days before admission, with fever, vomiting and anorexia. There were marked nervous symptoms, staring of the eyes, strabismus and listlessness. On the evening before admission, the child had spasm of the lower jaw and feeding became an impossibility. On the following morning, he had a severe attack of convulsions which was more marked on the right side.

On July 19th, the condition of the child was very poor, there was marked dyspnea and cyanosis. The temperature during the day was ranging from 101 to 103.5 F., pulse, 160; and respiration 60. The fontanelles were bulging; the pupils were dilated and reacted to light. Ears, nose and throat showed no abnormalities. There was a distinct lobar pneumonia, at the right upper lobe, mostly marked at the apex. The

¹Read at a meeting of the Eastern Med. Soc.

liver and spleen were somewhat enlarged. There was marked tache present. The child had clonic convulsions on the side, the face, and the upper and lower extremities.

A lumbar puncture was made and 10 c.c. of thick pus was obtained. The fluid was examined by the pathologist of the Beth Israel Hospital, Dr. Eli Moschowitz, and diplococcus pneumonia was found. The child vomited several times during the day, he was unable to swallow and had to be fed by gavage. He had twitchings and occasional rigidity of the entire body, and there was stiffness of the neck. The hands and feet became cyanosed; the pulse was not perceptible, and the child died on the evening of the sixth day of his illness.

CASE III. Child, D. B., two years and six months old, was admitted July 8, 1908. He was well until seven days before admission when he became ill with fever, vomiting, and dyspnea, later, he became extremely apathetic.

On July 9th, the cheeks were flushed, there was herpes labialis present. The eyes, nose and ears were negative. The submaxillary, axillary, and inguinal glands were enlarged. Posteriorly, there were signs of complete consolidation of the right, middle and lower lobes. The reflexes were normal. T. 103.5; P., 140; R., 50.

On July 10th, the child's body became rigid, at times he was very restless, also dull and drowsy. He took very little nourishment. During the next five days, his nervous condition became worse, there was extreme apathy, a general rigidity of the entire body and at times twitchings of the extremities. Anorexia was marked, he coughed frequently, vomited a number of times, and screamed sharply during sleep.

The urine was normal. Ophthalmic reaction with tuberculin and Von Pirquet test were negative. Blood count showed 3,500,000 red corpuscles; haemoglobin 70%; 15,000 white blood corpuscles; small mononuclear, 20%; large mononuclear, 6%; polynuclear neutrophile, 70%; eosinophile myelocytus, 1%.

During six days, three lumbar punctures were made and altogether about 30 c.c. of slightly cloudy fluid was obtained under pressure. In the last two specimens, Dr.

Hertz, bacteriologist to the hospital, found distinct Friedlander's bacilli.

On July 18th, the temperature was ranging between 102 and 105 F.; pulse, 150; and respiration, 70-80. The child had nine convulsive attacks, each lasting from 3 to 7 minutes, which were controlled by chloroform, only. During the afternoon, the body became rigid, the eyes were rolled upward, and the pulse could not be counted. The child died on the seventeenth day of his illness. No autopsy was obtained.

The experience of various clinicians is well recorded in the literature of the subject. Drs. Musser and Morris in *Osler's Modern Medicine* say that among 49,028 clinical cases collected, meningitis occurred in 206 (0.24%), and on autopsy, out of 4833 cases, in 190 (3.5%).

In 1866 and 1868, Immerman and Heller from Erlangen (*Deutsches Archives fur Klin. Med. Bd. 5*) claim that they have found in autopsies made on 30 cases of pneumonia, 9 cases of suppurative meningitis. (Almost 1/3.) Hugo Meyer (from the Pathological Institute of Dorpat, 1887) found 5 cases among 11 autopsies.

Dr. Holt (*Archives of Pediatrics*, Vol. X, p. 1012, 1893) states that in 500 cases of acute pneumonia he observed only four cases complicated with meningitis. (Less than 1%).

Dr. Osler (*Modern Medicine*, Vol. 2) says he found that 8% of the fatal cases which he observed in Montreal Hospital, had this complication.

Dr. E. Aufrecht (*Nothnagel's Practice Diseases of Lungs*), claims that in 253 autopsies, he found meningitis but 7 times, besides this he has noted meningitis 3 times, a complication in pneumonia, in patients who recovered. In 1501 cases, there were but 10 cases of meningitis, (0.66%).

Dr. E. Otten (*Jahrbuch für Kinderheilkunde*, Berlin, May, 1909, Vol. LXIX) reviews his experience in 250 cases of croupous pneumonia in children since 1897: 34 of the cases had brain symptoms during the course of the disease, such as unconsciousness, delirium, hyperaesthesia, stiff-neck, etc. Spinal puncture was made use of. Pneumococci were found in the blood of 9 of the 70 children thus examined and 5 of the 9 succumbed to the disease. Two of these children died of suppurated meningitis. (8%).

In the Children's Department of Beth Israel Hospital, Dr. Francis Huber's service, from Oct., 1907, to Oct., 1909, we have had 180 cases of lobar pneumonia, 6 of these died from meningitis complicating pneumonia. (3.3%).

Dr. G. Liebermeister of Koln (*Munchener Medizinische Wochenschrift*, April 13, 1909) made special examinations of the spinal cord in 11 cases (ages between 41 and 72 years) and records that changes of characteristic inflammation of the meninges were found in 1/3 of the cases examined, and clinically, often no symptoms were observed. Macroscopically, no changes were seen. It was only by careful histological study that the meningitis was discovered.

Dr. Churchill (*Archives of Pediatrics*, Vol. XXIV, p. 891, 1907) claims that next in the frequency of the meningococcus as a cause of pneumonia comes pneumococcus. From all the cases of meningitis collected, he found that 10% were due to pneumococci.

A general pneumococcus infection has been demonstrated by a great number of bacteriologists. Dr. Ewing (*Oster's Modern Medicine*, 1902) gives a total of 348 cases of pneumonia, in 160 of which the pneumococcus was isolated from the blood.

In view of the facts mentioned above, it is rather surprising that more cases of meningitis complicating pneumonia in children, have not been recorded. Possibly, some of the patients who succumbed were not carefully examined for meningeal complications, as the entire attention has been as a rule directed to the lungs, and not to the spinal cord and meninges, therefore, some important pathological and histological changes have been overlooked.

It would certainly throw more light on the subject of meningeal pneumonia, if a more thorough examination would be made of the spine, reflexes and eyes, besides the lungs. Also, special attention should be given the blood cultures and the examination of the cerebro-spinal fluid.

DISCUSSION.

Dr. Walter Lester Carr said, it seems to me Dr. Hymanson has done well to draw attention to the necessity for careful examination in the meningitis of pneumonia, as well as to point to the statistics and the difference in the methods of examination. The pneumococcus infections are to be determined by blood examinations which, unfortunately, are not generally made. It is unfortunate that meningitic infections complicating pneumonia are referred to by men who do not follow the examination and the cases carefully enough to fully determine whether meningitis is actually present or not. We should, if possible, make sure as to whether meningitis is present by a blood culture. The mortality of meningitis complicating pneumonia is considered very high.

Dr. Louis Fischer said, in cases of pneumonia complicated by meningitis, we are frequently at a loss to make a diagnosis early and I should like to second what Dr. Hymanson brought out in regard to the necessity of having a lumbar puncture when we have rigidity of the sterno-cleido-mastoid or where we have other symptoms pointing toward a complicating meningitis.

In the case Dr. Hymanson referred to in which lumbar puncture showed pneumococci and in which there was a pneumonia, I do not know whether the doctor made a blood culture, but I think if he had, it would have been positive, that is, there would have been a pneumococcaemia.

The cases I have seen so far this winter have been uniformly bad.

One question. In reference to the case in which only four c. c. were brought out under pressure, he said the fluid was very turbid. There were only pneumococci found in the capsule?

Answer by **Dr. Hymanson.** Just pneumococci.

Dr. Fischer continuing. A case I have seen recently had a strepto-diplococcus. We received 15 c. c. and that child died within three to four days. These cases are the ones where a diagnosis if made early by lumbar puncture, will help a great deal. A lumbar puncture properly done is a trivial operation, but it must be done aseptically. The house staff with which I am connected do a lumbar puncture on every case of convulsions to relieve the pressure. They do it as soon as rigidity appears. It can be done in a few minutes and I have never seen an infection follow it.

Dr. Henry W. Berg said, I was very much interested in Dr. Hymanson's report of those two interesting cases of real meningitis complicating pneumonia. The fact which was referred to by Dr. Carr that very frequently doctors are apt to make diagnoses of meningitis when the symptoms are only meningeal and are due to the toxæmia, is due to the fear that there may be a meningitis, and knowing the fatal character of it in pneumonia, they protect their reputations by diagnosing it from the toxic symptoms.

I do not know any sure way of making the diagnosis of meningitis complicating pneumonia except by lumbar puncture. The finding of the pneumococcus if we have a case of lobar pneumonia, will of course make the diagnosis of complicating meningitis positive. The finding of streptococcus or staphylococcus will make the diagnosis positive. The finding of diplococcus of Weichselbaum makes the diagnosis extremely interesting. During epidemics I have several times found in a case which began as a pneumonia, meningitis symptoms intervening and the lumbar puncture later showed the diplococcus of Weichselbaum. It is of much more practical importance to indicate some way by which meningeal symptoms will enable the practitioner to make the diagnosis without puncture, because while it is true that pneumonia cases of the lobar type occasionally die, and much depends on the treatment, yet it is invariably true that a case of complicating meningitis invariably dies. There are symptoms clinically by which we can differentiate and almost positively diagnose the presence of a complicating meningitis in a case of lobar pneumonia. These symptoms are chiefly paralysis of cranial nerves. If in a case of lobar pneumonia, we see a peculiar stare of the eyes with one pupil dilated and the other contracted or if there is strabismus, or the muscle supplied by the fourth nerve on one or the other side is paralyzed or if there is seventh nerve paralysis on one or the other side, or if the child does not respond readily when

irritated (pneumonia cases do respond) but if the child does not respond, if the respirations have been extremely rapid and in spite of the fact that the lungs show no signs of resolution, begin to diminish, all these are reliable symptoms. Opisthotonos is absolutely unreliable. Paralysis of the cranial nerves is the most reliable symptom and the most reliable of all is paralysis of the third nerve. Given a case of pneumonia with these complicating cranial nerve palsies, we can believe we are dealing with real meningitis and not toxins complicating pneumonia.

ETIOLOGY AND DIAGNOSIS.

The Effect of Febrile Diseases in Diabetes Mellitus.¹—Brasch has studied the effect of intercurrent febrile diseases on the metabolism of diabetics and arrives at the following general conclusions: (1) Febrile diseases may increase or decrease the glycosuria in diabetes mellitus. (2) Mild cases of the disease usually show a decrease in the quantity of glucose, without subsequent ill effects. (3) Increase of glycosuria and the occurrence of acetoneuria may be seen in severe cases of diabetes during febrile diseases; in some instances, however, no change in the excretion of sugar is noted during the course of the fever, but subsequently the patients rapidly decline. (4) The cause of the fever is of less moment than the severity of the diabetes.

TREATMENT.

The Treatment of Pneumonia.²—In concluding an exceedingly interesting paper based on his own 460 cases of pneumonia. Napier says: "In considering the *treatment* of this disease in hospital, it would be grossly wrong to omit reference in the first place to the good effect which must undoubtedly follow on the removal of the patient from a home environment which is often close and stuffy and overcrowded, dirty, uncomfortable, and destitute of the first essentials of proper nursing, to a hospital ward in which there is light and air, ample cubic space, efficient ventilation,

¹L. Brasch, M. D., Deut. Archiv. f. klin. Med. xcvi, 508.

²Alex. Napier, M. D., F. R. C. P. Glasgow Med. Jour., March, 1910.

thorough cleanliness, and a uniform and unvarying temperature. I do not think the temperature of our wards varies more than 2 or 3 degrees Fahrenheit night and day.

As regards general management and treatment, we have, in my wards, gradually developed a *routine* line of practice which seems to answer very well. The patient is, of course, kept absolutely in bed; he is fed *hourly* while he is awake, his diet during the febrile period consisting of fluids, such as milk and well-thickened beef-tea or chicken soup, about four fluid ounces on each occasion, the milk being sometimes given in the form of curds. No poultices or other form of external treatment; no opiates or hypodermic injections of morphia. Pain, usually pleuritic, was found to be best relieved by the application of a *firm* binder, 4 or 5 inches broad, pinned round the lower ribs below the nipples. I cannot recall to mind any case in which I had occasion to order the administration of morphia hypodermically, or in which the *firm* binder failed to ease pain.

In the way of medicines, my sheet-anchor has been a combination of chloral and digitalis, given every three, four, or six hours; $7\frac{1}{2}$ to 10 grains of chloral hydrate with 10 minims of the tincture or one or two drachms of the infusion of digitalis.

This is a line of treatment identified with the name of my old friend, the late Dr. Geo. W. Balfour, of Edinburgh, who advocated it strongly, in dealing with pneumonia, in the *Edinburgh Medical Journal* (vol. xxxii, part 1, p. 93). But long before that time my attention had been directed to the use of chloral in acute febrile diseases in which the heart suffers severely, by a paper published nearly forty years ago in the *Glasgow Medical Journal* by the late Dr. J. B. Russell, on the advantages of the administration of this drug in typhus—surely of all diseases that in which the heart muscle is poisoned and weakened to a high degree; and it occurred to me that it might be equally useful in pneumonia, a disease which resembles typhus in so many respects. As Balfour remarks, "Death in pneumonia, whether it arises from sudden syncope, from pulmonary œdema, or from gradual sinking, has failure of the heart as its beginning and its end." Sharing this

view most fully, the question naturally arises, Is it safe to use chloral in a disease in which heart failure is the great danger to be averted? I believe it is not only safe, but actually advantageous, and I think my statistics prove this; in fact, I think this is one of the instances in which laboratory results have to be checked by clinical experience. I have never found it, when given reasonably, unfavorably influence the heart's action, but very much the reverse. Indeed, the combination mentioned is one which I use probably more frequently than any other in cardiac disease with failure of compensation marked by general anasarca, lividity, and pulmonary œdema. In pneumonia its advantages are many: it gives sleep, eases pain and cough, tends to lower the temperature and slow the heart, dilates the arterioles and lowers peripheral vascular tension; in particular, it is one of the best and most trustworthy expectorants in the pharmacopœia. In relieving the patient's distress and soothing his irritability it seems to favor an easy and an early crisis. Most such patients drowse through their illness, presenting in their easy and quiet aspect a marked contrast to the distress shown by many others treated simply by stimulating or expectorant remedies. Incidentally also, nursing becomes a much less difficult task.

Strychnine I give when heart failure seems to threaten. It should be given freely, if given at all—5 minims of the solution hypodermically every four or six hours. Oxygen also I have found of much value when cyanosis begins to be evident; it also has to be given lavishly if any good is to be expected from its use. Stimulants I have used very sparingly—probably not at all in at least one half of my cases.

Camphor in Pneumonia.¹—The author finds that camphor in large doses, injected early in the disease (12 cc. of a 20 per cent oily solution twice daily), is a specific in pneumonia due to the pneumococcus. The 21 cases treated showed the following characteristics: (1) There was no crisis, but a slow and steady deferves-

¹A. Seibert, M. D., Muench. Med. Woch., Sept. 7, 1909.

cence by lysis, with general improvement of all the symptoms dating from the first injection. (2) The improvement was most marked after every renewed injection. (3) The disease was considerably shortened. Not a single case was lost. Large doses of camphor are well tolerated, thus, one patient received 4.32 gm. within twenty-four hours without any after-effects. Experimentally, it could be shown that pneumococci will not grow on culture media if 1 part of camphor to 10,000 is added. Pneumococci injected into the ear-vein of rabbits will soon prove fatal, but it is possible to save the animals if 1 cc. of a 20 per cent camphor oil is injected one hour later.

The Treatment of Gastric Ulcer.¹—

Von Leube describes his routine treatment of gastric ulcer: (1) Absolute rest in bed for from one to two weeks. This relieves the pain and promotes the healing of the ulcer. After the tenth day the patient should lie down two hours after dinner. (2) One glass of tepid Carlsbad water twice a day. (3) The application of hot stupes to the epigastrium, renewed every fifteen minutes during the daytime. At night a wet linen cloth is substituted. (4) A light diet of high nutritive value and easy digestibility.

In the severe hemorrhagic cases von Leube puts the patients to bed, gives one dose of 30 drops of a 1 to 1000 solution of adrenalin and an injection of morphine to quiet peristalsis, and complete abstinence of food by the mouth. He substitutes an ice-bag for the hot stupes and gives bismuth. When the stool shows no longer the presence of blood and there are no other signs of hemorrhage he cautiously commences a liquid diet. He replies to Lenhartz that while eggs and milk may bind the acid, at the same time they cause the secretion of more acid and increase the peristaltic movements of the stomach. He does not give iron because he says ulcer patients do not tolerate it well. Von Leube adds that a study of 25 cases on the liquid diet for two weeks did not show any marked reduction in the hemoglobin. He warns against the use of laxatives. By this

routine method he has reduced the mortality from 13 per cent. in his first published series of cases to 0.5 per cent. in the present series. He reports in all 627 cases treated by this method.

GENERAL TOPICS.

The Obstetrical Forceps.¹— Probably the first authentic record, says Quigley, in a most interesting article, of the use of the forceps is in the writings of Avicenna, an Arabian physician, born 980 A. D.; he mentions the use of forceps to deliver living children. His account, written in Arabic, was in 1555 translated into Latin. He was the author of several books, among them "Canon Medicinæ," a classic for six centuries. The next we hear of the forceps is that form used by Albucassis, who was born near Cordova and died in 1122 at 101 years of age. This instrument, however, could not have been used for the extraction of living children, for the inner side of the blades or jaws were provided with teeth, consequently their purpose must have been the extraction after the death of the fetus.

Jacobus Ruoff, a native of Zurich, born in 1524, described a long and short forceps. These instruments were very crude and their utility was somewhat limited as can be inferred from the fact that the two branches were permanently joined, did not permit of disarticulation, and, consequently, had to be applied as a whole. This brings the story of the forceps down to the famous Chamberlen family, the father of which, William, sought England as an asylum in 1596, having fled from France because of religious persecution. His two sons, Peter, the younger, and Peter, the elder, began practice in London. They became successful, and were pre-eminent in midwifery, claiming with some authority that they could effect deliveries when all others had failed. The younger Peter died in 1626, leaving several children, one of whom was called "Doctor Peter" to distinguish between father and uncle of the same name. He was well educated and settled in London. He was elected F. R. C. P., and like his father he was very successful, particularly in obstetrics, though

¹R. Von Leube, M. D., *Deutsche Med. Woch.*, xxii, 961.

¹J. K. Quigley, M. D., *N. Y. State Jour. of Med.*, Aug. 1909.

possessing some of the qualities of a quack. His egotism is evinced by his epitaph which he himself wrote, beginning:

"To tell his learning and his life to men,
Enough is said, here lies Chamberlen."

He died in 1683. One of his sons, Hugh, a physician also, because of too active participation in politics, fled from England to France (over a century after his great-grandfather, William, had fled from France to London). Here he attempted to sell for 10,000 livres the family secret of the forceps to the Parisian obstetrician, Mariceau. To test his ability he was given a rachitic dwarf to deliver and failed. The patient died in three hours and an autopsy showed a ruptured uterus. He returned home, and about 1782 sold the secret to Roonhuysen, of Holland. Later it was sold secretly to each candidate licensed by the Medico-pharmaceutical College of Amsterdam.

After a few years the secret was purchased and made public (Vischer and Vander Poll). It was then discovered that the secret invention bought by the licentiates was in latter day parlance in the nature of a "gold brick," for they were swindled into accepting for good coin of the realm one blade only of the Chamberlen forceps.

Hugh Chamberlen left a son, Hugh, Jr., (1664-1728) also a practicing physician, a much esteemed and public spirited man. He disclosed the family secret, and forceps were in general use in England in a short time. Some historians, however, claim that the credit for making public the description and use of the forceps belongs rather to Giffard, who about the time of Hugh Chamberlen, the younger (1724-31), had 225 forceps deliveries and whose report of these cases with illustrations of the instruments and descriptions appeared after his death in 1733. However, this may be, the Chamberlens did not invent the obstetrical forceps, but greatly improved the instrument of Ruoff by inventing a lock which allowed of disarticulation of the branches. They also fenestrated the blades. They thus made valuable the invention of another man, a brilliant and ingenious work, but lost the fame and honor for this by their unprincipled and mercenary action in keeping secret this life-

saving discovery in order to restrict the use of it to their own family for four generations, and later selling it. Aveling says, "It is not fair to judge men of 200 years ago by the ethics of to-day, but the general opinion of the conduct of the Chamberlen family is one of condemnation."

Though most text-books contain cuts of the Chamberlen forceps, it might be well to briefly describe the characteristics of the four pairs of instruments found in 1813 by the housekeeper of a brewer who purchased the old Chamberlen country house. They very plainly show in four stages the development of the instrument in the Chamberlen family. They were short, possessed the cephalic curve only, and were necessarily straight. The handles were not unlike those of a large pair of shears; the lock was not adequate, and it was found necessary to bind the handles together. From this meagre description it is readily appreciated that only the low operation was practiced by the Chamberlens or the many who used the instrument, till the time of Levret and Smellie, both of whom simultaneously did much to broaden the field of forceps operation.

Levret, in 1747, added the French lock, pelvic curve, and shank, making the long French forceps of to-day. Smellie published in 1751 a description of his instrument possessing a pelvic curve and English lock. This was a short instrument.

At the beginning of the nineteenth century every important obstetrician invented a forceps, attached his name to it, or if he was unable to invent, he modified some one's else, till there were about two hundred different instruments described, some of which existed only on paper. There was no real farther advancement till 1877, when Tarnier enunciated the brilliant principle of axis traction by the invention of the instrument bearing his name. He estimated that of every thirty pounds applied in traction in high forceps operations twenty-six pounds were exerted upon the unyielding symphysis. It is claimed that forceps had much to do with the decline of the practice of midwifery by women alone and that shortly after their introduction the "man midwife" was seen.

LITERARY NOTES.

The issuance of the *Collectanea Jacobi* is a particularly happy event just at this time when the American profession are preparing to celebrate the eightieth anniversary of Dr. Jacobi's birth. The editor



of this great collection of a great man's writings deserves the sincere gratitude of not only the medical profession but of the whole world of letters. It is no small task to gather the contributions of a lifetime so fruitful and extending over so many years and arrange them in their proper relations. While the editor may well say that the arrangement, classification and compilation of Dr. Jacobi's papers, articles, essays and addresses, has been a labor of love, full of pleasure and literary interest, it must none the less have entailed a large amount of hard work and close application. For the way therefore in which he has labored and the beautiful books he has given to those who delight in good printing, attractive binding and good book making generally, to say nothing of their value from literary standpoints, Dr. Robinson is bound to receive the grateful commendation of thoughtful readers everywhere.

To speak of the articles, essays and addresses which the *Collectanea* presents, one's first thought is of the versatility of this great physician. The American profession has been particularly fortunate in the contributions its members have given to general literature. No little part of our American literature that will live, can be credited to medical men. While Dr. Jacobi's literary excursions outside of his calling, have not been as extensive as some of his colleagues, nor of a character to appeal as popularly to the average

lay mind, they are none the less valuable contributions to the field of letters.

First and foremost, through all his productive life, Dr. Jacobi has been a physician. This has been his lifework and everything has been subordinated to the demands of his beloved calling. It is not necessary to mention the success he has achieved in the practice of medicine. But it is when we turn to the essays and addresses that go to make up the *Collectanea Jacobi*, that we get a view of the author's broad humanity and philosophic citizenship. His sense of proportion is magnificent and as a result his opinions are as sound and true as a die. Everything he writes has this stamp of good judgment. One cannot help but feel, here is a man whose judgment and common sense are to be trusted. Carried into the practice of medicine, can one wonder that Dr. Jacobi has won the place he has?

Then there is the touch of patriotism. Although not born in the United States, no one can question Dr. Jacobi's great love for the country of his adoption. Probably no man has had a deeper appreciation of the duties of citizenship. Keen to realize sociologic needs, for years he has been an earnest advocate of everything that would tend to raise the standards of living. Accordingly he has long been preaching and teaching the importance of modern hygiene and sanitation as factors in human progress.

All of this is amply shown in the *Collectanea Jacobi*. So it can be truthfully said that these volumes reflect the man and tell more eloquently than any words of his admirers, what a fine, noble life he has lived. Such a life cannot fail to be a constant inspiration, and lucky indeed are those who have been able to enjoy a close association with this man, who has played his part so well as physician, teacher, author, citizen and friend.

Every American physician should have the *Collectanea Jacobi* in his library, and use it often. This splendid set of books will prove a never ending source of delight and give one a broad and intensely human view on many different topics. It is a fitting monument not only to a life of action in humanity's behalf but also to a mentality that has demonstrated in countless ways its admirable poise and usefulness.

SOCIETY PROCEEDINGS.**EASTERN MEDICAL SOCIETY.**

The regular monthly meeting of the Eastern Medical Society was held on the evening of April 8, 1910, at the Cafe Boulevard, the President, Dr. A. J. Rongy, in the chair. The following program was presented:

1. Presentation of a case of Tumor of the Brain—Decompression Operation, by Simon Rottenberg, M. D.
2. Experimental Surgery of the Heart and Aorta, by Alexis Carrel, M. D., (by invitation).
3. Treatment of Endocarditis and Myocarditis, by Abraham Jacobi, M. D., LL. D.

The above papers with full discussion will appear in the May issue of AMERICAN MEDICINE.

A collation was served after adjournment, to which the members and guests were invited.

NOTES ON MODERN PHARMACEUTICAL REMEDIES.**CASOID FLOUR.**

Description. An albuminous flour designed expressly for preparing bread, biscuits and other articles of diet for diabetics. It is claimed that it does not contain starch, sugar or dextrin in any form.

Formula. Following is the formula of Casoid Flour:

Water	10.80
Fat	1.40
Mineral Matter	2.50
Proteids	84.56
Cellular Fibre, etc.	0.74
	100.00

Uses. Casoid Flour is recommended for making bread, cakes, crackers, etc., to be used to the exclusion of ordinary bread in the dietetic treatment or management of diabetes. The high nutritive value of the Casoid Foods and their freedom from starch and sugar can leave no doubt as to their special utility. Clinical experience has well substantiated the claims of the manufacturers, and Casoid Foods unquestionably solve the problem of a starch-free diet. These foods are extremely palatable and are enjoyed by children as well as by adults. Under their use it is comparatively easy to determine the toleration point for starch and with this established, to maintain the metabolic balance.

The widespread employment of Casoid Foods by English and American physicians furnishes abundant evidence of the regard in which they are held. The benefits that are obtained are a matter of intelligent observation and the notable gain that generally follows the substitution of Casoid Foods for all other bread stuffs, leaves no need for further argument.

Method of Use. The use of Casoid Foods calls for the establishment of no elaborate or involved regime. They should simply be taken in place of all other breads, cakes or breadstuffs of any character. The various forms in which the Casoid Foods are supplied, and the many different ways in which they can be prepared and served, assures ample variety for the most fastidious or fickle palate. They can be taken *ad libitum* to meet every demand of the appetite or need of nutrition.

Special Considerations. Casoid Foods are especially noteworthy for their practically absolute freedom from starch or sugar, their highly nutritious character, ease of digestion, their convenience and palatability.

Manufacturers. Callard, Stewart and Watt, Ltd., London, Eng.

American Agents. Thos. Leeming & Co., 73 Warren St., New York City.

Balsam-Oil Dressing in Surgery.¹

The advantages of the balsam-oil dressing are stated by Parsons to be as follows: (1) There is continuous drainage of the wound surface; (2) wound secretions are not retained under an impervious scab, and the absorption of toxins is thus avoided; (3) bacteria are killed and eliminated from the field; (4) epithelium grows and is not rudely torn off at each dressing; (5) dressings are almost painless; (6) granulations are encouraged but do not become spongy; (7) irrigation is unnecessary; and (8) the wound does not require redressing oftener than at intervals of from 48 to 72 hours.

¹A. L. Parsons, M. D., Louisville, Kentucky, Med. Jour., March 15, 1910.

American Medicine

H. EDWIN LEWIS, M. D., *Managing Editor.*

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The Death of Dr. Howard T. Ricketts from typhus fever in the City of Mexico, adds another name to the growing list of American physicians who have laid down their lives in the study of disease. In the midst of the common struggle for money, position and power, it is good for mankind to know that there are individuals who are exposing themselves daily to the gravest of perils, with no other object than the effort to solve the great problems of disease. It is too bad that a life has to be sacrificed to teach the people at large that such true unselfishness actually exists. But it needs a harsh lesson once in a while to make an impression on a people so self-absorbed as we have become, and the tragic side of Dr. Ricketts' death will perhaps serve a far-reaching purpose after all. From certain standpoints it may be said that the death of this young and splendidly educated physician represents an abject failure. Not only did he fail to accomplish the object of his undertaking, but he lost his life, and the world is robbed forever of services, which in the light of his previous work gave unusual promise. He was a hero—but fate made him fail. This is one side.

But there is another, and if there is a man or woman on God's green earth who will not thrill at the picture presented, his or her heart must be of adamant. Modest-

ly and unobtrusively, but with the enthusiasm of the true lover of science Dr. Ricketts delved into the pathologic secrets of this dread disease, typhus. It calls for no words of ours to tell how loathesome and repulsive were the details he was called upon to investigate. But he never flinched and with never a fear or thought of self, he worked on. Who can say what visions were with him as he toiled and studied, visions of wresting the final pathologic secrets from a few stricken bodies and with the facts learned to emancipate humanity for all time from one of the remaining scourges? Who can say how close he was to his goal and what exultation he may have felt at the boon he expected to give to his fellow men? And then the end came! The talons of the monster reached out, and in a few hours it was all over. Almost at his work table, with his eye to his microscope, or while at the bedside of some afflicted patient, the blow fell. And he who a few hours before had been an enthusiastic, hopeful, confident seeker of the truth, a possible deliverer of the people from the scourge of typhus was now nothing but another victim, defeated and silenced forever.

But in his sublime devotion to scientific investigation, seeking with unlimited zeal that which would not enrich him nor bring him anything but the satisfaction of work

well done, Dr. Ricketts has given the world an example of unselfishness that can hardly fail to inspire all mankind.

Call such a life a failure? Rather call it an exemplification of the grandest success a man can achieve, a success that can only be born of a true love of humanity.

"Greater love hath no man than this, than that he shall lay down his life for another."

The passing of the insanity excuse for crime may now be confidently predicted. Our former complacency in turning loose murderers on any manufactured mental diagnosis has had the inevitable result—a carnival of homicide which has amazed the civilized nations of Europe. It has come to such a pass that men with murder in their hearts apparently expect to be excused should they give way to their passions, and the absence of the deterrents so effective in northern Europe has created a license which is jeopardizing everyone's life. The dismay among thinking men has now reached the point of a clamor for the confinement of every murderer be he sane or insane. If he is responsible then the confinement is in a penal institution for the purpose of reforming him, but if irresponsible he must be sent to a hospital to be cured. In each case, the primary consideration is the protection of society from a repetition of the crime by that particular man. Experience shows that confinement for a single crime of passion is an almost perfect preventive, as it is the rarest thing for the released criminal to commit another. His one offense has sobered him and the punishment is always remembered when passion again arises, if it ever does. In the case of the insane, subrational or irrational, there is a different condition to

deal with, as the defective nature of the brain may nullify the ordinary deterrents so effective with the normal. It is therefore necessary to confine these cases longer or even for life if the mental state is such that the irritations of daily life in society are liable to cause a relapse into irresponsibility.

Responsibility of criminals is therefore taking on a new meaning in response to the public opinion which demands greater safety of life. After the facts are established and the jury has rendered a verdict that the accused did commit the offense, then is the time for the "experts" to examine the convict to determine whether he shall go to prison or asylum, providing of course it was not a justifiable act such as self-defense. The new viewpoint is that every violation of law is necessarily to be followed by the removal of the offender for the protection of society. Proof of irresponsibility no longer excuses, it merely determines the method of treatment. Dr. James J. Walsh, Professor of Nervous Diseases at Fordham University has even gone a step further, (*Amer. Jour. of the Med. Sciences*)—and suggests a reversal of the purposes of punishment. The normal man who slips once under extraordinary passion or temptation is really in the least need of punishment, as his remorse is proved sufficient. It is the subrational who need the greatest mental impression, and these, even if feeble minded can be taught self restraint by proper confinement, though of course the existence of insanity will be a bar to release in every case. This is revolutionary but society demands a revolution of some kind and every suggestion must receive consideration. It seems therefore that we are drifting to the old theory that the sole purpose of punishment is its deter-

rent effect upon others. Fear of consequences is the mainspring of good conduct after all is said about our desires to do right. If everyone knows he is sure to lose liberty or life, if he takes life wantonly, our present epidemic of murders will cease. Nevertheless, the individual has rights even if he is a convict, and his restoration to a useful member of society is a public duty. Punishment is still a cure as well as a deterrent.

Old age pensions are now recognized as public necessities, and we do not refer to the pauperizing state aid given to old people who have done nothing for the state and who are now being pensioned simply because they are old, but to the retirement of faithful servants who are no longer able to do efficient work. It has been found by experience that a corporation is more loyally and efficiently served if its servants know that they need have no fear of distress in old age. So it has become the rule to retire employees on pension as soon as senile inefficiency occurs. In addition, the work falls into younger hands and that still further increases efficiency. The only exception is the poor old federal government which has persistently refused to establish a retired list for those civil servants who have grown old in its service. No one has the heart to discharge them and it is now said that the departments are full of men who are unable to work and who prevent others doing it. The expense is enormous and would be greatly reduced if they were retired in favor of younger and more efficient men. Why Congress hesitates to establish the system of retirements and thereby reduce expenses and increase efficiency is difficult to imagine.

The medical side of old age pensions consists in determining the proper age for retirement in various lines of work. It has been found that a ship's master should not be over 60 on account of the mental sluggishness which comes on in that neighborhood. The Navy wants its captains to be less than 55 or even 50. Even the admirals retire at 62 and some say it should be 60. The Army sticks to 64, but there is a movement on foot to make it 62 or 60. Teachers are now retired at 65 which seems the favorite age in other lines too, except in some executive offices where the limit is at 70. The supreme court allows retirement at 70, but that is the place for very mature men of conservative judgment—a balance to inconsiderate innovations of youth. It seems therefore that a careful study of senile changes must be made and that the general practitioner should record his observations in the psychology of his aged patients, for the whole subject is becoming of practical importance in public as well as private enterprises.

The effects of rapid and prolonged deep breathing are described in *Science*, Dec. 3, 1909, by D. F. Comstock of the Massachusetts Institute of Technology. They are sufficiently startling to warrant more attention from physicians, for he truly states that though they are well known in a general way, scientists as a rule are ignorant of the matter and there are many occasions in which the process can be put to valuable uses. Briefly it may be explained that the blood is thus so super-saturated with oxygen, that all the functions are stimulated to greater activity and respiration can be suspended for three to five minutes. Consequently, there is a rise in

the pulse rate, mental fatigue is lessened, sleepiness disappears and muscular power is greatly increased as in the case of oxygen inhalations of athletes. These results follow deep respirations of less than four minutes. Pearl divers practice the method and stay under the water five minutes or longer, but as they are notoriously short-lived, we must warn against the dangers lest the method might be adopted by swimmers to their ultimate ruin. It is the ordinary method of respiration of whales, but they have evolved lungs which are not strained by one very deep inspiration which supplies enough oxygen for many minutes. Yet it is a good thing for swimmers and firemen to know, when rescue work demands a cessation of respiration for some minutes even at some risk.

Sleepiness should not be overcome as a rule as it is nature's signal to stop work. If efforts are continued in spite of fatigue, the quality of the work is poor and the exhaustion inordinate. Students constantly make this error, and do all sorts of things to keep awake to burn the midnight oil, when if they would go to bed and rest, they could accomplish far more in half the time in the morning with little or no fatigue. Yet there are times when sleepiness and fatigue must be overcome without resort to stimulants which injure the judgment. The tired physician with a critical obstetric case, for instance, must have his wits about him, and it will aid him vastly to go to an open window every fifteen or thirty minutes to take a dozen or two of deep inspirations of cold air. His exhaustion in the end will be great but he can make it up later. As a matter of fact, surgeons and others, whose work requires the keenest perceptions, instinctive-

ly choose the early morning for their best efforts, reserving the afternoon for "low-pressure" tasks or recreation. That is, it is far better to so live that we do not need the stimulus of these extraordinary methods of respiration.

The damage done by red light has so long been known that it is rather surprising to see red glass used so extensively. The effect is not only upon the retina in the way of fatigue and irritation, but also upon the nervous system itself. When a red-free light is installed in printing offices, the relief is so great that no other will be tolerated by the workmen. Photographers and others who must work in dark rooms are learning to replace the red light by some other which will not have an actinic effect upon their materials. Amber or yellow glasses which exclude the red are now becoming an everyday affair with a large class of ophthalmologists and in the tropics they are declared to be essential where there is any glare, particularly on the water. The new amethyst colored glass described by L. Webster Fox of Philadelphia has a most remarkable effect though it excludes more of the yellow rays. It was discovered by accident, and the first used was old window glass discolored by sunlight—a well known phenomenon. So far it has been found to be of great value in easing up retinal hyperaesthesia, and deserves more study. Of course the only rays for which the retina has a normal protection are the green ones of the vegetation, in which we were immersed for so many millenniums when the retinal purple was being evolved. Consequently green light is the best for comfort but unfortunately it cuts out too much of the yellow rays which are the ones of maximum visual ef-

fect and therefore seeing is not so good. Still the whole matter of the effects of colors on the retina is somewhat tangled up even yet and needs considerable work to unravel the discrepant statements. This should be done by physicians in the tropics for they have material the year round while the northern cities have a strong light only a few months in the year and their cases of retinal injury are not nearly so numerous or so severe.

The frequency of hepatic sclerosis in non-alcoholics has again been brought up by Benedict of Buffalo (*N. Y. Med. Rec.*, Dec. 25, 1909), who finds that in about one-fourth the cases little or no alcohol had been taken, in over half only moderate amounts, but that in only sixteen percent was it possible to elicit a history of excess and even in these, he believes the result not due to the alcohol itself as much as to the poisons formed and absorbed in the dyspeptic conditions due to the alcohol. Moreover in all the non-alcoholic cases he found distinct histories of recurrent attacks of dyspepsia due to any of the numerous causative faults of hygiene or to strains and worry. So he is inclined to believe that every case is due to auto-intoxication from intestinal fermentation and putrefaction. He could not detect any relation to the excessive use of meat or sugar but the latter is a very likely cause. Heredity was ruled out because so few cases appeared in two generations, and those were alcoholics. Nevertheless, the tendency to any sclerosis is now such a well recognized sign of faulty physique, it is a pity the cases are not investigated with a view of determining if relatives are not "weaklings" in the sense of being more or less liable to other serious

conditions or are not snuffed out by the infections. Indeed there is much evidence which links together all the scleroses in one big group of defectives, for why indeed should so few dyspeptics have this liver condition if they are not built of weak materials? Similarly it is said that arteriosclerosis does not affect the well-bred to nearly the same extent as the badly-bred—that is, from similar causes. The family histories are important, now that alcohol has been acquitted in both these conditions. And, by-the-way, it would not be a bad plan to go over other diseases now blamed on alcohol, for it has been given discredit where it is probably innocent. If all our carbohydrate food is changed into alcohol prior to final assimilation as some physiologists say, it cannot be such a devil as it has been painted.

An award of damages for typhoid is at last an accomplished fact, after having been talked about for several years. The plaintiff claimed that he contracted the disease at a restaurant and sued the proprietor for the damages inflicted. The facts were evidently proved, if we can believe the press reports, and a precedent was at once established. There is thus an end to the disgraceful era of irresponsibility when anyone could spread disease and death broadcast without fear of punishment. Travel must be made safe and the dreadful record of typhoid following a trip from home, must be ended. Hotels and restaurants must not infect us any more. The old carelessness or criminality in furnishing decayed food was a disgrace to civilization though it is now largely abated through the energetic inspections of health authorities. We presume that hotel proprietors also have a remedy at law, should the food deal-

ers send them unsafe articles which cannot be detected, such as infected milk. Unfortunately publicity would injure if not ruin a hotel's trade, and therefore the only course to pursue is to exert great care to buy only those articles which are guaranteed. The pure food laws are making this so practicable that there is now no excuse for contracting disease in public eating places. When infection is due to the failure of duty of municipal authorities, it seems that it should also be possible to collect damages. If so, it will be cheaper to be clean and decent in the first place. Neglect of sanitation will soon be such expensive business, that it is safe to predict but little opposition to proposals to supply pure water, to dispose of sewage properly and to do all the other things now neglected because of expense.

The proposed National Department of Health bids fair to have anything but clear sailing; and yet Senator Owen's bill is so conservative in tone and withal so sensible and comprehensive that it is difficult to understand how any person of sense and unbiased judgment can offer serious objection to its becoming a law. The present scattered arrangement of the various governmental bureaus or commissions concerned with public health matters is little short of ridiculous. Not only does this condition cause an enormous waste of time and energy, but it must necessarily lead to confusion and a decrease in efficiency. It has long been inexplicable why the Marine Hospital and Public Health Service should be under the control of the Treasury Department, any more than why the Bureau of Chemistry, charged with the general interpretation of the Pure Food and Drug Law, should be a part of the Department

of Agriculture. The whole situation is a reflection on systematic government and cannot be corrected too soon for the best interests of the American people. A single department or bureau should straightway be organized to take over the at present widely scattered health agencies, and henceforth continue them under a central head. In this way only can the activities of the various agencies be utilized to the greatest advantage. All this has been pointed out repeatedly by the Committee of One Hundred under the able leadership of Professor Irving Fisher of Yale, and by the progressive medical journals of the country. Repetition will do no harm, however, and it is certainly excusable in view of the needs of the situation. It should occasion genuine satisfaction that Senator Owen's bill at last gives Congress a chance to effect the reforms that are urgently needed, and provide the country with a good, broad-gauged health law commensurate in every way with the importance of the proposition.

But now comes opposition from a so-called National League for Medical Freedom headed by a B. O. Flower of Boston. In extensive advertisements in the daily press, the movement for a national department of health is stigmatized as pernicious legislation in the interests of the "Doctor's Trust!" Not only is the American Medical Association thus dubbed, but this splendid institution is further maligned in the most atrocious and malicious way. This attack unquestionably emanates from the New Thought, Christian Science and other faddistic schools of healing, who, not content with freedom to follow their own teachings, must thus endeavor to hamper the great and noble work that the legitimate medical profession are doing in

their honest efforts to prevent disease and promote the physical welfare of the whole American people.

That this opposition will attract every force and interest fighting the Food and Drug Act and other national and state laws looking to sanitary supervision and improvement, goes without saying. Whether the bill for a national department of health and the institution of broad effective laws regulating the quarantine, sanitary and public health matters of the country can weather the opposition created (1st) by those who seek to foist all manner of freak "pathies" on the people; (2nd) by the food and drug sharpers who resent supervision, and (3rd) by all others who seek to prey on the ignorance or innocence of the public, only time can tell.

But when one stops to consider the enormous work that has been unselfishly done by the medical profession through its national and state organizations in giving to the people the benefits of such splendid legislation as the Pure Food and Drug Act, it seems the height of injustice that honest faithful efforts should be so fearfully maligned and so seriously handicapped.

"What's the use?" Why should we, the honest, hard working medical men of the country go on fighting so strenuously to prevent disease and cut down its ravages? Try as we may our motives are misconstrued, our most earnest efforts are looked upon with suspicion, and our results are belittled and besmirched.

Why should the medical profession keep on fighting to protect the people from their own follies, when success means a decrease of disease and an inevitable decline in professional incomes? Why do we go on striving to perfect health laws when such laws rob us of our means of livelihood?

The answer is not difficult to determine. Every earnest physician merges himself in his work as do men in few other callings. The practice of medicine is a humane profession. All unconsciously the spirit of unselfishness creeps into a true doctor's life, and sooner or later he finds himself living not for himself but for humanity. There are plenty who will scoff at this and ridicule the idea. But every doctor who reads this knows that there is an exaltation felt by those who minister unto the sick and suffering that makes the active practice of medicine the most gratifying, most satisfactory calling on earth. It is good to be a doctor of medicine, to feel the responsibilities one is forced to assume, and then to realize the trust and confidence that patients give to us in their hours of greatest distress and anguish. It is these very things that make the practice of medicine ennobling in many ways that only those engaged in its pursuits can understand. If the laity could only grasp and analyze the psychic effects of the sense of personal responsibility that becomes a real force in every honest doctor's life, there would be a great deal more sincere respect entertained by those who are now all too prone to criticize and condemn.

And so in spite of being misunderstood, of being slandered and falsely accused of the basest motives, every earnest physician will go on fighting for the right as he sees it. Let the jackals howl and the snakes hiss, our duty is plain and whether we win or not we can never be robbed or cheated of the benefits that invariably accrue from doing our best. The true apotheosis of medical practice has ever come from its least appreciated and sometimes most actively combatted efforts in behalf of indifferent or unwilling humanity.

The surgical treatment of diabetes mellitus. Anyone who would have discussed the surgical treatment of diabetes ten years ago, would have been considered a fit subject for ridicule, and even at the present time there are many who will feel disposed to treat such a suggestion in somewhat the same manner. It is a very hard thing for the medical mind to disabuse itself of the idea that surgery can have no part in the treatment of diabetes, except as an *ultimum refugium*. The surgeon has always had a dread of operating in diabetic cases on account of their well known tendency to terminate fatally, and so his work has been chiefly confined to emergency surgery, or to amputations for gangrene resulting from this condition. As our knowledge of its pathology has advanced, however, the possibilities of surgery in its cure have correspondingly increased. Diabetes is no longer looked upon as a pathological entity, since the glycosuria which is its salient feature may be the manifestation of diverse lesions. Investigations of recent years have shown that the largest proportion of cases are more or less connected with pancreatic disease, and that this in turn is dependent upon causes which are sometimes remediable by surgical intervention, provided this is resorted to before the destructive changes in the pancreas are too far advanced. Thus it may now be considered a well established fact that pancreatic disease leading ultimately to glycosuria may be related etiologically to gallstones in the biliary ducts, calculi in the pancreatic ducts, cholangitis, duodenal ulcer, pressure of adhesions, etc. It is therefore not too much to anticipate that if in such cases surgical measures are not too long delayed, the onset of diabetes

may be prevented or its course at least arrested.

A notable contribution to the surgery of glycosuria has been recently made by A. W. Mayo Robson, the distinguished English surgeon (*British Medical Journal*, April 23, 1910). From a large experience he expresses a view that the greater number of cases of glycosuria due to pancreatitis are dependent on inflammations of the catarrhal type in which the gland is invaded by way of the ducts, from varying causes, such as gallstones, pancreatic calculi, duodenal catarrh, (often associated with duodenal ulcer) typhoid fever, etc. This catarrhal process later leads to an interstitial inflammation and still later to cirrhosis of the gland with more or less destruction of its functioning cells. It will therefore be readily understood that the surgeon can only intervene successfully if the case comes under his observation either in the catarrhal stage or the earlier stages of interstitial inflammation before any marked destruction of the islands of Langerhans has occurred. Of course the question at once comes up whether it is possible to recognize the disease at this early period, and it is a satisfaction to be assured by so eminent an authority as Robson that this can usually be done by careful examination of the urine and feces and by a consideration of the clinical history and symptoms. The writer knows of at least one case of well marked and chronic diabetes in which the disease was completely arrested by operation with removal of gallstone and separation of extensive adhesions. This patient had failed to respond to all kinds of treatment until he was fortunate enough to come under the observa-

tion of a surgeon who, disregarding the glycosuria, operated for what he believed to be the causative factor. Robson relates a number of very convincing cases of this kind in which the removal of gallstones, the separation of adhesions, the drainage of the gallbladder, and other surgical measures effected a more or less complete cure of the diabetic condition.

Probably the most important lesson to be learned from the clinical evidence thus far adduced is that in all diseases of the upper abdomen, particularly if the liver, gallbladder, stomach or colon be affected, it is advisable to examine the urine for the pancreatic reaction. If this be found it serves to indicate the presence of disturbance of the pancreatic functions or of actual disease of that organ. Such a reaction may be obtained long before sugar appears in the urine, and judicious surgery undertaken in this stage may be considered as a prophylactic measure against diabetes. The mere fact that the surgeon may successfully intervene in certain types of glycosuria should not, however, encourage indiscriminate operation in a disease which is still in a great measure an unexplored field of surgical endeavor.

Fear as the cause of tuberculosis is the nonsensical hypothesis advanced by an Idaho man. At a Dairymen's meeting—the birthplace of many an "outré" idea nowadays—a Mr. Miller is quoted as saying that the death rate of tuberculosis increased in Idaho over 120 per cent last year as a direct result of the educational propaganda of the local state board of health! This brilliant thinker claims that the disheartening conditions presented to Idaho people so depressed them that they

straightway went home, and fell victims to the disease! A more ridiculous or senseless line of reasoning would be difficult to imagine. Fear of any evil is one of Nature's principal means of combatting it, and tuberculosis offers no exception to the rule. The active campaign against tuberculosis that has stirred the whole civilized world during the past decade took its inception from the warrantable alarm that was felt at the terrible ravages this disease was making, and if the "great white plague" is ever successfully dethroned as the chief of humanity's scourges, the main factor in such a result will be the wholesome fear that it has always inspired. When people are afraid of anything their judgment and ordinary sense of caution teaches them to avoid it. Idaho people are no different, and we do not believe for a minute that the dissemination of information concerning tuberculosis, its methods of transmission, and the accepted means of preventing and controlling its spread led to any different result than has occurred in other intelligent communities. This result has invariably taken the form of an improvement in sanitation, a closer adherence to the principles of personal hygiene, and greater care in avoiding infection. That the intelligent exercise of such precautionary measures is having a marked and far reaching influence on the occurrence and mortality of tuberculosis is being demonstrated beyond all doubt or controversy.

Fear is an essential factor in the prevention and control of all preventable diseases, but especially of tuberculosis. There is no more dangerous phase of the anti-tuberculosis movement than the possibility that the too zealous preaching of the doctrine that the disease is "curable" may lead

thoughtless people to minimize its dangers and relax prophylactic measures. It has been definitely proven that tuberculosis is preventable, and taken in its early stages it can be controlled and arrested by appropriate treatment. But eternal vigilance is necessary if this voracious monster is to be defeated, and there can be no relaxation of the methods that have been found effective in the struggle. Fear, therefore is both wholesome and necessary. The more we can inspire the young and indifferent with the dread of tuberculosis, the better it will be for all concerned. But no one need worry that being afraid of tuberculosis will bring on an attack. If fear of the disease meant giving up all hope, ceasing to eat and hysterically surrendering to morbid apprehensions, an increased susceptibility to the disease might follow with disastrous effects. But the American people are too sensible to be affected in any such way—Mr. Miller of Idaho notwithstanding—and healthy fear means rational efforts at self protection. As a consequence the work of the countless health boards, tuberculosis commissions, anti-tuberculosis societies, etc., of the country cannot be too highly commended. The conquest of tuberculosis is surely going to be accomplished some day, and the sober, well grounded fears of the people must play an important part.

Phthisiophobia and normal fear of the character we have been discussing, are as separate as the poles. One is insensate and ill founded, the other is sensible and founded on actual fact. One is born of inordinate selfishness, the other of a proper sense of precaution. We have no sympathy with the phobia that makes the con-

sumptive a creature apart, to be shunned and isolated. Nothing that we know about the communicability of tuberculosis warrants such a course, and as a consequence it is always occasioned by one of two things, selfishness or thoughtlessness. The consumptive is dangerous only when he violates rules of common decency, rules, by the way, which are equally necessary for the well and healthy. Hospitals, sanatoria and camps for the tuberculous are free from danger and the nonsensical fear that communities have so frequently evinced to the point of actively opposing the establishment of such institutions, is not only foolish but often cruel in the extreme. Nothing can be said about such fears, except to condemn them; from no standpoint are they justified and selfishness is the only moving force.

In conclusion, no sensible person will be apt to confuse the selfish phobias which lead the narrow-minded to shun the consumptive patient as they would a leper, with the healthy fear that properly leads every individual to fortify himself or herself against the insidious attacks of a treacherous foe. To leave a vulnerable point in one's physical condition is to be false to every interest of self or family, and so the fear or alarm that leads one to protect oneself to the fullest, is not only logical but a testimonial to one's good sense. But the phobia that causes anyone to treat a consumptive as a pariah, or that increases ever so little the burden a tuberculous patient has to bear, is not only illogical but a sad reflection on one's instincts of humanity. It is nothing more or less than barbarism of a type that makes our vaunted claims of being civilized little short of ridiculous.

ORIGINAL ARTICLES.

DIET IN TYPHOID FEVER.¹

BY

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It is possible to look back centuries and see the changes that fever diet in general has undergone, and of late, as our clinical knowledge has become broader, there is an especial tendency to a freer diet in this disease.

Typhoid fever is stamped with an individuality and an insistence that has compelled the closest study and conscientious care of the world's best physicians.

Centuries ago differences in continued fevers were noted, but distinctive typhoid symptoms were not clearly recognized until 1813. Three hundred years ago typhoid was treated, as were all the other continued fevers, by the antiphlogistic method, viz., starvation, emetics, cathartics and bleeding. There was great opposition to milk in some of those back ages.

I have thought it might be interesting to take three well known physicians practising some years apart, and see their preferences in diet.

Sir Thomas Watson in his *Practice of Medicine* (1857) was not an advocate of blood letting, but advised the early employment of beef tea and other means of support. "If plenty of beef tea do not suffice, you must give the patient wine, and that sometimes to a large amount, or even brandy. The egg flip of the pharmacopoeia. In convalescence his wish to eat animal food should not be too soon indulged in—causes relapse. Until tongue is quite

clean and moist, the patient must be kept to broths, jellies, puddings, and preparations of the well known farinaceous foods. Then he may begin with some boiled white fish, and so gradually eat his way through chicken and a mutton chop to ordinary diet."

Niemeyer in his 1879 edition of *Practice* says: "Most fatal cases of fever are due to insufficient material being furnished for the replacement of that used up. The loss of weight and the great debility urge us to give meat, milk, eggs, etc., rather than water soup, but dyspepsia is a constant accompaniment of fever, with lack of gastric juice, and we can hardly expect the digestion of large quantities of protein substances. Therefore, we have learned from experience to give at first small quantities of milk and strong broth several times daily, whenever they desire it. The longer the disease continues and the greater the exhaustion, the more untiringly we must supply nourishing food, but always in small quantities and in fluid form."

Pye Smith in 1888 said: "Food throughout the whole course of the disease should be fluid—especially milk—three or four pints a day. If necessary dilute with lime water, or barley water. May allow beef tea and calves foot jelly. Give pure water." Then he adds, "but before many days the tongue is furred and dry, the patient can taste nothing, and cold water is the most grateful drink."

Some of us recall the teaching of that able physician, Alonzo Clark, who used to say in his lectures that because of the diseased condition of the stomach in typhoid it could not digest well, and consequently everything solid in the way of food was out of the question. That milk was the best food for those who could dispose of it, and

¹Read before the Brooklyn Pathological Society, November, 1909.

for those who could not you will be obliged to do the best you can with beef tea, raw eggs beaten up with water, and expressed beef juice.

As hospital interne I found a routine treatment followed, with milk mainly as the diet.

Since then, for years, it was supposed that there was no other safe diet, and that dry tongues, and a certain percentage of perforations and deaths were decreed. Typhoid conditions and results were indeed unsatisfactory. Our remembrance brought a gallery of typhoid pictures sadder than the plague pictures in the churches of Venice. The sadly wasted and prostrate patient, with dusky hollow cheeks, dull eyes, vacant stare, trembling lips, parchment tongue, twitching muscles, coma vigil, with brainless muttering vainly picking phantom objects. Many of us remember this as a frequent picture. It has come to be known as the typhoid condition.

Another picture, even more vivid in our minds, was of the typhoid intestine riddled with the ulcers of which we had such a studiously definite knowledge; their shape, position, etc., etc., and the dangers accompanying them. It was indeed *enteric* fever, and the anatomical conditions of the intestine were so impressed upon us, that they and their dangers obscured somewhat the general septicaemia and its greater danger. Intestinal ulcers! The *noli me tangere*—and we argued that the least harmful food would be liquid, and milk was chosen as the liquid containing all the requisites of nutrition, and bread and meat and rice were excluded as not being liquids, and liable to irritate the inflamed glands and ulcers.

So milk alone was used; and we tried to avoid dry tongues and tympanites by the

aid of digestants and intestinal antiseptics. Only the best milk was used, and yet the patients wasted badly.

Doubt began to arise as to whether milk *was* the only safe food for a typhoid patient, and even whether it was the *best* food. It was known that normally the casein of the milk was precipitated in the stomach and that the curds thus formed were dissolved again by the gastric juice, and that gastric juice was deficient in typhoid. Physiology asserted that the pepsin and hydrochloric acid dissolved all kinds of true proteids. The function of the stomach was to transform these foods as well as the milk into a soupy mass, the chyme, and prepare it for entrance into the intestine, and the chance of proteid food undergoing this transformation, and becoming liquid before reaching the intestines seemed quite as good as that of milk.

Much has been said concerning the loss of absorbing power of the stomach and intestines during this disease. Atwater found that 79 to 82% of nitrogen was absorbed during the febrile period, and after that time 85 to 90%. Best authorities say the absorption is only 5 or 10% lower than in health. Milk is not digested as well as beef by 3%. Fats and carbohydrates are well digested.

The danger of irritation from faeces is very small as there is little residue from carefully selected solid food, and the thin liquid which the stomach turns into the intestine, could do little harm to the ulcers, even if its absorption were not almost completed in the upper part of the small intestine.

After considering the wisdom of employing a solely milk diet, and the safety of a greatly enlarged one, came the question as to the comparative sustaining power of the different diets.

This question of diet in fevers has been thrashed out many times, and with varied conclusions. After the early starvation, bleeding and purging treatment, there was a period when light vegetables were given, but no proteids or milk. Then there was a reversion again to the old starvation and bleeding system.

The milk diet came into general use some forty years ago, and acquired a firm footing with the medical profession.

Dr. Shattuck, of Boston, was one of the first in this country to break away from the established custom, and give a liberal diet. From 1886 to 1893 he found that of 233 patients carried on a milk diet, the mortality was 10%. From 1893 to 1902, of 246 patients upon a liberal diet, the mortality was 8.45%.

In 1895 Bushuyev gave very liberal diet to 80 patients, while his colleague kept 74 others on fluids, mostly milk. The mortality among those fed with the liberal diet was 10%, while 12.1% of the liquid-fed patients died. In 1897 Bushuyev treated 318 cases on solid diet, with loss of 8.2%. Previous hospital mortality had been 12.4%.

In 1897 Dr. Barrs of England, reported 31 cases with three deaths; and the fatal cases were unable to take solid food. None of the cases taking solid food early, died. Much more testimony of the same kind could be quoted.

Having established the safety of a liberal diet, it is in order to view the shortcomings of a milk diet, and the superiority of the liberal one.

When a patient takes milk well it is an excellent diet, because it contains the essentials of a complete food, is easy to take, and is easily handled. It should never be given pure, but always diluted with lime or barley or oatmeal water, or be pepton-

ized. Without the dilution, milk curds are likely to be found in the intestine, which are irritating to the ulcers and possibly productive of hemorrhage and perforation. Milk is a good culture medium. I have long been accustomed to cut off the milk whenever there was any considerable amount of abdominal distension. Milk is said to be poorly absorbed when the only article of diet, even in healthy adults. Forcheimer calculates that a well person weighing 120 pounds, resting in bed the whole 24 hours, requires 1925 calories. The feverish typhoid patients would require still more.

Two quarts of milk is about all a patient can take in 24 hours, continuously. These two quarts are a little less than 1,300 calories, 600 short of the normal need. Add to that the loss of muscular tissue as a consequence of fever, sometimes 1½ lbs. a day which must be compensated and it is estimated that the deficit in calories amounts to about 50% a day. Typhoid may require 2,800 calories.

This starvation diet, then, in no way renews the waste of the disease, but leaves the patient to become weaker and thinner as the poisons of the disease and the fever run their course.

Dr. Barrs believes that the ulcers cannot heal as readily with this deficient feeding, and that perforation is more likely. That the same conditions are requisite for healing in the intestines as anywhere else.

What are the advantages of a liberal diet? Typhoid is a self limiting disease in that the fever disappears when the blood has in some way counteracted the bacilli and toxins which the system contains, and rendered it immune. Until such a time, and to hasten this time, the great effort should be to sustain the strength of the patient. It seems to be the general opinion

of those who have used it, that the liberal diet does this. That the combined length of the disease and period of convalescence will be shortened, and the emaciation and weakness lessened, the comfort of the patient increased, and the death rate lowered.

The belief that hemorrhage and perforation would be more frequent with the liberal diet, has not been sustained. No greater per cent. of perforations has occurred.

Lenhartz has been feeding cases of gastric ulcer by the stomach, with better results than from the former treatment. Comparison has been made between diet in the presence of typhoid ulcers, and in cases of intestinal tubercular ulcers, the latter of which do not seem to be at all harmed by the forced feeding common in that disease.

Relapses should not be more frequent than with the milk diet, for they come from reinfection, not from food. Temporary returns or fever due to some intestinal fault, perhaps error in diet, or to some excitement, should not be carelessly spoken of as relapses. They occur not infrequently with sole milk diet and have been declared less frequent with the more liberal diet.

What is to be considered a liberal diet? Referring again to Bushuyev, I will detail the diet he employs in typhoid, which is the most liberal that I have seen.

At 7 A. M. a cup of tea and a roll. 8 A. M. 400 c. c. of liquid oat meal, wheat or barley gruel, with butter. At 9 A. M. one or two eggs boiled to suit the patient; 10 to 11 A. M., a glass of milk, half a cutlet and 160 grams of boiled meat. 12 to 12.30 P. M. 200 to 220 c.c. of soup, a cup of jelly, rarely preserves. 3 P. M. cup of tea and a roll. 6 P. M. cup of chicken or beef soup, semolina pudding or milk and a bit of chicken. 8 P. M. a glass of milk and a roll. During the night a cup

of tea or coffee with milk, from 2 to 4 times, with from one to three ounces of wine or coffee and brandy in the morning.

Doesn't that read almost like a fairy tale? Yet hear what he says of it. "The general condition of the patient is far better than with milk. They are uncommonly wide awake at meals, even those very ill. Sit up in bed, beg for food, and eat with much satisfaction." I fancy that few of our neighbors venture as broad a diet, notwithstanding Dr. Bushuyev's confidence.

In the liberal diet, food is not urged upon the patient. He must take it willingly. Neither must there be a quick transition from a spare to a liberal diet.

Since September 1st, I have been on duty at the Kings Co. Hospital, and since Oct. 1st, also at the Brooklyn Hospital. I have had under my care in both places twenty-seven cases of typhoid up to November 1st.

A fairly liberal diet has been employed in most of the cases. For example: one man 27 years old received the following: At 8 a. m. cereal 3 oz., milk toast one slice, coffee 8 oz. At 10 a. m. soup 6 oz., one powdered cracker. At 12 m. poached egg on toast, and wine jelly 2 to 3 ounces. At 2 p. m. eggnog, 8 ounces. At 4 p. m. raw scraped beef one ounce in toast sandwich, and boiled rice 6 oz., with 2 oz. boiled custard over it. At 6 p. m. koumyss 6 oz. At 8 p. m. milk 6 oz. At 4 a. m. milk 6 oz.

Diet was varied in different cases according to conditions. In one case a scraped beef sandwich on one day, alternated with poached eggs on other days, with eggnogs every day or two, the rest of the food being cereals, pea or bean soups, beef juice, hard boiled eggs grated and mixed with powdered cracker, custard, jelly, junket and ice cream.

The only fatal case was a man who died the day after admission; an alcoholic, very ill for two weeks before coming in, but having remained in bed, with dry tongue, tympanites, petechial spots, suppurative irido-cyclitis, and temperature of 105° . He had milk and albumin water while he lived.

An interesting case was of a man accustomed to drink a quart or more of whiskey daily for a long time, almost since he was fifteen years of age and ran away with a circus. His food for a week before admission had been crackers and his drink water. He had vomited meat and potatoes. Diarrhea had been troublesome and he had passed some blood three days before admission. On the night of his entrance into the hospital, he had three hemorrhages from the bowels, of about four ounces each. All nourishment was stopped. Nothing but water for two days. Then for four days only water and liquid peptonoids. Then peptonized milk, liquid peptonoids, albumin water and beef tea. Fourteen days later began gruels, milk toast and eggs. He was admitted on Oct. 6th and on November 6th full typhoid diet was given.

One patient whose temperature had remained in the region of 103° dropped suddenly to 97.6° . No other untoward symptom. Pulse 88 and good quality. He was having the diet mentioned above and no change was made. The temperature went promptly up again above 100° and in about nine days reached normal.

The liberal diet was given in 18 cases. In one case pure milk and albumin water. In another, milk for six days after admission, then liberal diet.

In all these cases except one the Widal was positive; and in that one rose spots, enlarged spleen and characteristic temperature assured the diagnosis.

In 27 cases the abdomens were distended in seven. Six were distended on admission. The seventh had been confined to diet of milk and vichy after entering the hospital. This was changed to a liberal diet, and the distention soon came down.

Two cases were relieved by enemas. Another two cases were relieved, one in ten days and the other in a few days longer, without special medication or enemas, they being upon the liberal diet.

Out of 27 cases, 22 had no diarrhea; most required enemas. Of the rest, one had from 2 to 5 stools a day, some of the time, others fewer. Only one received drugs for this symptom. They became constipated afterwards. In all cases where diarrhea was present in those fed with the liberal diet, no change was made.

The tongues were dry on admission in six out of twenty-six cases. One of these dry tongues became moist in four days on a diet of milk diluted with water, whey, and gruels. One upon the liberal diet required 15 days, another 11. None of the tongues became dry after admission to the hospital.

I have taken the time from the probable onset, to the day when the temperature reached normal and did not go above normal thereafter more than a degree or so, as a measure of the length of the illness.

In those upon liberal diet, the number of days was 15 to 17 (2); 18 to 20 (4); there being more at twenty days than at any other limit, and more than half of them coming within 20 days. One case with relapse continued 43 days. One, kept entirely upon undiluted milk and albumin water, became normal in 48 days, including a relapse.

None of you can be more sensible than I of the error one would make in reaching fixed conclusions from these few cases, and

from such facts as I have presented. No two cases may have the same susceptibility or the same amount of poisoning. Habits, character of previous treatment, absence of treatment for some days after the onset of the disease, and many other circumstances greatly impair the value of any classification of facts. Yet I have been interested in placing these cases side by side, and comparing them in my mind with cases seen in previous years. This has resulted in the following firm impressions:

1. That milk alone is not the best diet for typhoids.

2. That some such diet as I have outlined, is perfectly safe and more sustaining.

3. That there are fewer bad symptoms, such as dry tongue, distention of the abdomen and excessive diarrhea.

4. That the patients are more comfortable and better satisfied during their illnesses.

5. That convalescence begins rather sooner and the restoration is easier.

6. That probably there are fewer complications and deaths.

164 Clinton St.

TUBERCULOSIS OF THE GENITO-URINARY ORGANS.¹

BY

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In this necessarily brief review of so large a subject as tuberculosis of the genito-urinary organs, the consideration of the acute miliary variety, as well as that of tuberculosis of the female genitals, has been entirely omitted, and, in the subjects presented, brevity being a necessity, reference will be made only to the more important points.

Primary infection of the genito-urinary tract by tuberculosis, although possible, is

clinically not the rule. When these organs are attacked it is generally through the blood current which carries the infection from a previously existing focus in some other part, though this focus may be perfectly quiescent and may have given no symptoms to call attention to its presence. The bacilli circulate with the blood current through the various organs, where, when the natural powers of resistance to their invasion are normal, they are thrown off or destroyed. But they find their opportunities when this resistance is lowered, either by general vital depression due to disease or by local causes which provide the field favorable to their proliferation.

Among the local causes in the genito-urinary tract, calculus stands out prominently with its train of local pathological changes that interfere with the function and impair the nutrition of the part. In the genital organs, gonorrhoea with its results takes first place among the local predisposing causes. Epididymitis, vesiculitis and prostatitis impair the nutrition of the organs affected and render them more susceptible when exposed to the invasion of the infection.

The genital and urinary tracts being each distinct from the other, the infection that begins in either naturally follows the course of that tract in its spread. But extension from one to the other, especially in the male where they are much more closely related, is common, particularly from the bladder to the prostate and seminal vesicles and so on to the epididymis, and vice versa from the epididymis, by the same path to the bladder and along to the kidney. But cases are also noted where simultaneous infection of the kidney and of the testicle occurs and yet the communicating organs about the base of the bladder are not involved.

¹Read at a meeting of the Eastern Med. Society.

Here we must assume that both infections are derived independently from the same source—the bacilli in the general circulation.

Though tuberculosis of the kidney is usually acquired through infection from the blood, other modes are possible, such as an ascending infection from the bladder which certainly does take place when the bladder is the prior seat of the disease, as is proven by the spread of the infection to the second kidney from a bladder that has received its infection from the first. Another mode is by direct extension from contiguous structures as from a tuberculous pleura or peritoneum or abscess burrowing from some other situation.

In kidney involvement the first signs noticed by the patient are usually urinary frequency, lumbar pain and bloody urine. Bleeding may be free and is often the first intimation of any trouble. When not among the prominent symptoms it is almost sure to be found on microscopical examination which will also show the bacillus in the majority of cases.

Repeated examinations may be necessary before the bacilli are found and to avoid overlooking them, as well as for the prevention of error in their identification, these examinations must be made with the utmost care. The smegma bacillus is likely to be mistaken for the tubercle, and very recently Brem (*Jour. A. M. A.*, Sept. 18, 1909) has demonstrated a bacillus that grows in sterilized water used in laboratory preparations, which very closely resembles the tubercle bacillus. The presence of the bacilli does not in itself prove affection of the urinary organs, for derived from other sources and circulating in the blood, they may filter through an uninfected kidney and appear in the urine. Other microscop-

ical elements found in the urine are pus cells, the quantity depending on the stage of the process; epithelial cells from the pelvis of the kidney when the stage of pyelitis has been reached; casts in moderate number in the early hyperemic stage and more abundant later when the kidney substance begins to break down.

The urine is increased in quantity and of low specific gravity. Albumen is present in variable amount according to the congestion and the stage of the disease and in relation to the presence of blood or pus. Reaction is acid and the odor is not bad except in the later stages when mixed infection and ammoniacal fermentation have complicated the conditions.

Cystoscopy is of great service in diagnosis of comparatively early cases. When the kidney begins to discharge its infectious material to the bladder the ureteral orifice of the affected side inflames and the contiguous area of bladder wall becomes congested and ulcerates and the accompanying infiltration interferes with the normal ejaculatory or valve-like movements of the ureteral outlet. All this may be clearly seen with the cystoscope and is fairly reliable evidence of involvement of the kidney in connection with that ureter. There are very early cases that have not arrived at the stage where this picture may be seen as well as late cases that have progressed beyond this state and in which cystoscopy is difficult on account of advanced disease of the bladder. But a large proportion of cases come for diagnosis when these signs are obtainable.

The infection usually begins in the cortex where one or more cheesy nodules are formed. These are likely to be so near the periphery that they form projections on

the surface of the kidney. They break down into abscess cavities and, working in the direction of least resistance, point into the pelvis where they set up a pyelitis and discharge their infectious material with the urine. The necrosis of the tissues involves the blood-vessels and is the cause of the hemorrhages that occur. The abscesses gradually coalesce, eventually destroying the parenchyma of the organ and forming one large abscess within the capsule. This result is materially hastened if early obstruction of the ureter takes place either through tubercular ulceration and stricture or through the presence of stone. The resulting hydronephrosis becomes a pyonephrosis and the pressure of the accumulating confined fluids completes the entire destruction of the kidney.

Another mode of advance of the process may be through pointing and rupture of the nodules in the cortex externally into the capsule before much damage has been done to the kidney itself, or the pelvis might perforate, which is especially likely if the case be complicated by stone. In either case an abscess is formed in the capsule about a more or less functioning kidney. This abscess may remain localized, especially if it have an outlet through a perforation of the pelvis that permits it to discharge its excess accumulation of fluid, which it may do either continuously or intermittently. In the absence of such outlet the abscess may extend and point in the lumbar region, or work downwards along the psoas, or upwards about the liver or diaphragm. This tendency to spread is more pronounced in the presence of a mixed infection which, by the time this stage is reached, has usually supervened.

Not every case takes so progressive a course. The lesion may become circum-

scribed and develop a tendency to heal, which will keep it within limits to a certain extent and probably permit of its remaining in a quiescent chronic state. Yet it seems that the prognosis as to ultimate cure is less favorable in kidney infection than in that of many other tissues, for, once developed, it is usually progressive.

In these cases that do not run such an active course there is likely to be a considerable amount of infiltration and inflammatory thickening about the kidney, in its fatty capsule and involving contiguous peritoneum, lymphatics and the walls of the large and small intestines. The kidney itself may not vary much in size from normal yet may be surrounded by so large a mass of perinephritic infiltration as to show a large tumor on examination which can hardly be differentiated from abscess or malignancy. These cases are difficult to operate on account of the adhesions and general infiltration, especially about the pedicle.

The presence or absence of a mass in the kidney region depends on the course the affection is taking. In the early stages it is not to be expected. With obstruction and pyo-nephrosis it will appear, or a perinephritis with or without abscess will give it. With the development of large and burrowing abscesses the picture changes and becomes that of lumbar, psoas or perihepatic abscess respectively.

Tuberculosis of the ureter is always secondary to that of either the kidney or the bladder. In the former case the tubercular material passing through it carries and implants the infection in its course. In case of infection from the bladder it is not so easy to understand the *modus operandi* of its spread, as it is opposed to the direction of the urinary current, and

especially as it has been observed that the ureter and even the bladder, infected by a descending process, will improve when the source of the infection is removed. The ureter becomes infiltrated and nodular and ulcers form which may result in stricture. When the infection is an ascending one from the bladder, stricture is more likely to form before the kidney is badly diseased, and by the hydro- or pyo-nephrosis produced tends to hasten its destruction.

Tuberculosis of the bladder is usually secondary to that of kidney and reaches it through the ureter, or to that of the genital organs when the communication is by way of the prostate or seminal vesicles. The bladder is probably the seat of infection previous to kidney involvement in a small proportion of cases, and must be so if the theory of ascending infection of the kidney or of spread of the infection from the genital to the urinary organs, including the kidney, be correct. Clinically, tuberculosis of the bladder alone is a rare condition, as it is almost invariably accompanied by a kidney, prostate or seminal vesicle involvement. It is much more common in males than in females, tending to show that infection by way of the genitals is frequent.

The symptoms are similar to those of kidney involvement, namely, pain, urinary frequency and bleeding. The pain may be referred more to the lower abdomen than to the loin and tenesmus will be more marked. The urine microscopically will contain blood, pus, bacilli and bladder epithelium, but if the kidney be not involved its characteristic pelvic cells will be missing. Reaction of the urine is usually acid, thus differing from that of cystitis from other causes where alkalinity is the rule. The cystoscope furnishes the most valuable evidence in determining the diagnosis. It will

show the characteristic changes in the mucous membrane, from congestion about the ureteral orifice in a recent case of descending infection, or about the trigone in one of genital origin, to ulceration or studding of the wall with tubercles in those of longer standing. In more advanced conditions contraction of the bladder with possible sacculation makes cystoscopy very difficult and at times impracticable.

When the infection is a descending one catheterization of the ureters is of value to determine which kidney is, or if both are, involved. But this procedure must be used with every precaution to avoid infection of a possibly healthy kidney by carrying to it the infectious contents of the bladder with the ureteral catheter. Segregation of the urines in the bladder has not this disadvantage and is therefore often used, though the procedure is not so reliable as catheterization.

In the early stages of bladder tuberculosis of descending origin it is a matter of clinical observation that, if the offending kidney be removed, the bladder symptoms and cystoscopic signs improve or disappear. But when too far advanced, or from another source, the condition is progressive. Hemorrhages are frequent, ulcerations become extensive and their suppuration loads the urine with pus. The infection, if not primarily from the kidneys, travels up to them or, if originating in one kidney, spreads to the other. The process extends into adjacent structures, especially the prostate, or to the seminal vesicles and vas from where it easily reaches the epididymis and testicle. A mixed infection sooner or later comes on, often from instrumentation, ammoniacal fermentation takes place and an active cystitis is added to the tubercular infection. Perivesical cellulitis with forma-

tion of abscesses, that burrow and form fistulous tracts in various directions, is a late complication.

In tuberculosis of the genital organs the epididymis is most frequently the first part involved. The process may also begin in the testicle but this is not so often observed. In either case the infection comes from the blood current as otherwise neighboring structures would be affected and the connecting organs as vas, vesicles or prostate would be involved.

The epididymis and testicle in the genital tract seem to furnish the favorable ground for the development of the bacillus as the kidney does in the urinary tract. The beginning of the process is not accompanied by much pain, in fact the first thing noticed is usually a nodule in the epididymis, or enlargement of the testicle, tender only on pressure. This gradually enlarges, becomes painful and results in a general brawny infiltration involving the testicle, epididymis and tunica vaginalis in one mass, with more or less of a hydrocele of the tunic. In the further progress the nodules may caseate and remain quiescent for an indefinite period, or they may break down, suppurate, point and open on the scrotum where a discharging sinus persists. From the epididymis the infection travels along and involves the vas which can be felt as a string of nodules running along the cord. The seminal vesicles are next in line. There is little pain in connection with the vesiculitis and its recognition depends on palpation of the enlarged vesicles and possibly the discharge of bloody semen. The disease here may also result in abscess which may burrow and carry the infection to adjacent structures. It may also advance by direct continuity through the tissues and so involve the prostate and bladder and thus

carry the infection from the genital to the urinary organs.

The surgical treatment of tuberculosis of the kidney depends on many considerations. Kidney, unlike lung, the most frequent seat of tuberculous infection, is amenable to surgical treatment with reasonable chances of benefit when conditions are suitable. These conditions include a fair state of the general health, that the disease be not disseminated among the other organs, at least to such an extent as would preclude hope of relief by the removal or drainage of the kidney focus. That the opposite kidney be not tuberculous and that it be sufficiently free of other disease to permit it by itself to perform the excretory functions necessary to the maintenance of life.

As to the general health, if it be poor it is usually because the infection has taken hold of other organs in addition to the kidney. It stands to reason that if there be pronounced involvement in other situations the removal of an infected kidney will be of no avail. In such cases, only when the process in the one kidney be determined to be the cause of the impaired vitality, is radical surgical interference to be considered.

The determination of the condition of the opposite kidney, both as to infection and as to functional activity, is of the utmost importance. The possibility of the existence of a single kidney, a horse-shoe kidney or other anomaly must not be forgotten. Examination of the urines separately obtained either by segregation in the bladder or, what is more reliable, by ureteral catheterization, in addition to the symptoms and physical signs, will determine whether the opposite kidney is involved.

Cystoscopic appearance of the ureter mouths also gives important evidence. One

ureter mouth inflamed and one normal point very decisively to involvement of the corresponding kidney and imply absence of infection in the other. Statistics show the condition to be unilateral in about 33% of patients. In the bilateral cases one side is generally much further advanced than the other, a condition to be expected, for, as a rule, the infection begins on one side where it has time to develop before it reaches the other. Various measures are employed to determine the functional capacity of the opposite kidney. To a certain extent this may be judged from the usual urinary examination, especially the presence or absence of albumen and casts, which gives a general view of the condition of the organ. Urea estimation of a 24 hour specimen with comparative estimation of a segregated specimen from the kidney in question will give an approximate estimate of its capacity. Cryoscopy of the urine is not in use so much as it has been as, without the more difficult cryoscopy of the blood, it is not as reliable as was at first supposed. Subcutaneous injections of methylene-blue, indigo-carmin or phloridzin and observation, with the aid of the cystoscope and ureteral catheter, of the time and manner of their elimination by the kidneys are the tests more recently in use. In a fairly functioning kidney the color will appear, in the case of indigo-carmin, in about five minutes, while in the seriously affected one it will not only take more time but, when it does appear, the color will be less pronounced.

Nephrectomy is the ideal procedure in cases that have been determined to be suitable. With the kidney it removes the focus of disease and the remaining kidney takes up the work. No less radical procedure can be of lasting benefit. But

there are other cases where sufficient relief may be obtained through a nephrotomy to be of service in various ways. Relief may thus be had from an active process the cause of too great vital depression to permit of an immediate radical operation, thus giving opportunity for sufficient recuperation to bear the radical operation later. Nephrotomy may also be of service when both kidneys are crippled by infection, with one in worse condition than the other, or when one kidney is infected and the other incapacitated by tumor or disease. Incision and drainage of the better one in certain cases would permit it to resume its function sufficiently to sustain for a time an otherwise fast ebbing life. Nephrotomy is also serviceable at times as an exploratory measure, the subsequent procedure depending on conditions found.

The treatment of tuberculosis of the ureter is necessarily related to that of its adjoining organs, kidney and bladder, as its infection is always secondary to one or the other. In conjunction with the kidney it should be excised when found diseased, though, when not markedly so, it seems to cause no trouble if left in situ.

The bladder, though not a vital organ, can not be dispensed with as a single kidney can, as it is necessary to existence in any sort of comfort. Results of its removal with implantation of the ureters into the bowel or on the surface of the body have been unsatisfactory because of both the immediate discomfort to the patient and the almost certain ascending septic infection of the kidney that soon occurs through the artificially placed ureter openings deprived of the protective relations of their normal arrangements.

When the bladder is involved through a descending infection from one kidney,

and the process has not yet reached an advanced stage, the removal of that kidney is often followed by subsidence of the bladder condition. Why this fortunate outcome should ensue is not quite clear, but clinically it is frequently observed. With this exception the treatment of tubercular cystitis can hardly be radical except if treatment directed to improvement of the general health be considered so. Bladder tuberculosis is rarely primary and treatment of it must be in conjunction with that of other organs. Measures directed specially to the bladder are mostly palliative or symptomatic. Drugs given per mouth for elimination with the urine, such as creosote and its preparations, urotropin, boric acid, etc., have a beneficial effect which may be enhanced by combination with antispasmodics, of which hyoscyamus seems to be the best. Local treatment per cystoscope or by bladder washings with antiseptics or by injections of nitrate of silver or iodoform emulsion are used with benefit but have the disadvantage of the likelihood of converting the purely tubercular into a mixed infection by the introduction of new elements through instrumentation. In the advanced stages where mixed infection has taken place with ammoniacal decomposition and purulency the same treatment applies as that for chronic cystitis from other causes. Cystotomy, perineal or supra-pubic would be indicated for drainage though the probability of a persistent urinary fistula, which often results, must be kept in mind.

Tuberculosis of one testicle or its epididymis calls for excision of both those organs on the affected side. If the vas be involved that also should be removed by following it up through the inguinal canal as far as possible towards the base of the

bladder. This procedure is advisable even if involvement of the vas be not apparent, for it is the route along which the process extends to the seminal vesicles, prostate and urinary organs.

Unlike similar conditions in the urinary tract where, if the affected kidney be removed, the ureter and bladder usually improve, in the genital tract if the vas be implicated by a descending infection and not removed with its epididymis and testicle, the infection continues in its spread to the vesicles, bladder, etc. When both testicles or epididymes are involved, or, after removal of one, the second becomes affected, the question of results of complete castration comes into consideration. The loss of sexual function is so serious a matter to many of these patients that they prefer the alternative of retention of the disease with its consequences to the loss of sexual function and virility. In such cases conditions will at times permit of retention of one testicle or even of a part of one, with removal of that portion of the epididymis or testicle involved. This remnant will supply the requirements for the perpetuation of the sexual feeling. Such a case I had occasion to operate upon almost five years ago, and the results justify the procedure then taken. The case, in brief, is as follows:

T. M., age 33, married, pharmacist by occupation, was referred to me in November, 1905. Four months previously tenderness in his left testicle called his attention to a swelling there which increased in size, developed into an abscess and was incised, and which left a sinus, still persisting. Recently he noticed a swelling about the other testicle. Examination showed the contents of the left side of the scrotum fused into one swollen mass and

discharging through the scrotal sinus. On the right side there was a tender nodule in the globus major. The patient objected very much to a complete castration and I agreed to do the best I could to leave a portion of the more recently infected testicle. After removal of the left testicle, etc., with that portion of the scrotum containing the fistula, the right testicle was exposed and explored through the same incision. The tunica vaginalis was opened exposing the testicle and epididymis of which only the globus major appeared to be involved. This was resected and the testicle with the globus minor allowed to remain. In answer to my inquiry the patient writes me now, nearly five years after operation, that he is perfectly well.

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THE PROPER ATTITUDE OF THE GENERAL PRACTITIONER TO- WARD THE VENEREAL DIS- EASES.¹

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When I was invited by your distinguished president to present a paper at this meeting of your association, it seemed to me that nothing that I could say would be of greater interest to this large body of practitioners than a discussion of the venereal diseases from the viewpoint of the

specialist, as compared with the attitude toward these diseases usually manifested by the general practitioner.

It must be manifest to everyone that the general practitioner, the family doctor, whether he lives in the great metropolis or in the sparse country districts, does not seem to pay very much attention to the patient that comes to him suffering from the venereal diseases. By this term we include gonorrhea, chancroid and syphilis. Very often he does not even seem to take these ailments seriously, much to the detriment and discouragement of the patient, and to his own pecuniary loss as well. The venereal diseases are too often regarded as "unclean" and as necessary evils that go with the day's work, at best to be tolerated if they cannot be avoided, and as a result little attention is paid to them. The physician prefers to treat the purely medical or surgical cases that come to him, and to these subjects he devotes his serious medical reading and study. The fine points in the diagnosis and treatment of the venereal diseases do not attract him, and he is as likely as not to work in the dark, without having formed a clear conception in his mind of the nature and extent of the ailment from which the patient is suffering. As a result the patient necessarily suffers.

When we attempt to find the reason for this widespread attitude toward a large and important class of diseases, we are confronted with several psychologic phenomena that might account for it. Some practitioners have a natural aversion toward these diseases. The number is comparatively small, but I have met a sufficiently large number myself to indicate that this personal aversion has something to do with the dislike and apathy shown

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for these diseases. This dislike and apathy are naturally followed by an unwillingness to do as much for a patient suffering from a venereal disease, as for one suffering from another class, such as typhoid or pneumonia. It seems to me that a practitioner holding such views toward the venereal diseases, ought not to treat them, for it is surely impossible to give one's best efforts to a task that is disagreeable.

Another contributing cause is to be found in a lack of knowledge of the importance of the diseases we have under consideration. To the practitioner laboring under this lack of knowledge, gonorrhea is a simple matter involving the purchase of a bottle of medicine, a hand syringe and a suspensory bandage. Such a man regards gonorrhea as being nothing worse than a mere cold, and it is only when complications arise, or when the disease becomes chronic, that he awakens to a realization of the fact that gonorrhea is a disease that is entitled to respect at the hands of the physician. The same is true of the other venereal diseases, particularly syphilis.

This *laissez faire* attitude may be accounted for in still another way. Many practitioners have a fear, amounting almost to a dread, of being infected with these diseases, if they come in contact with them; these very men, however, willingly treat all the gynecology that comes to them, and surely, there is little to choose from in weighing the element of infection in the one sex and the other. In fact, it would seem on consideration, that the anatomical structure of the parts involved, would make infection far more liable in the female than in the male, with which sex we are at present specially concerned. Lastly, and perhaps more important than any

other cause, is the fact that very many of us have not yet freed our minds of the feeling that it is a sin and a crime to contract gonorrhea or syphilis. Too often, we can trace the physician's indifference and carelessness to this feeling, so widespread among certain classes of the laity, that venereal disease is a punishment for sin and crime, and that the victim, or rather the culprit deserves punishment rather than sympathy. Why such an idea should be found at this late day among members of our profession, it is hard to understand, but the fact remains nevertheless, much to our discredit.

Surely this attitude cannot be defended. The sufferer from venereal diseases has a right to be treated in the same humane spirit that actuates the physician in his treatment of other diseases, and it would seem that the highest morality as well as the best interests of the state require that he should be accorded the best possible surgical attention. As long as physicians and laymen will regard these diseases as unclean and unholy—as long as they attach to them the stigma of vice and crime, there will continue to exist that attitude of indifference and antagonism that we are discussing. In this connection let us remember that we are at the beginning of a world-wide movement that has for its object the study and prophylaxis of these venereal diseases. It has spread to every civilized country and it has made gratifying progress in our own country. The greatest obstacle in the growth of this movement, is to be found in the attitude of medical and laymen, especially among the clergy, who regard these diseases as taboo and unfit for discussion. This policy of imitating the ostrich will never help the race toward progress. The general prac-

titioner is the man to lead in this movement against the venereal diseases, but before he does so he should free himself from the belief that there is something unholy about these diseases, something to be ashamed of. The physician must be able to point out to the community in which he lives, that venereal prophylaxis through education is not only desirable but eminently practicable, and he must change his attitude from one of indifference to one of decided interest, so that he shall not be taxed with living in a glass house.

The point I wish to make is that the man or woman who contracts a venereal disease is not necessarily a criminal beyond the grace of pardon, and that the physician should not hesitate in the least degree to treat a venereal disease in the same broadly humane spirit with which he regards disease of a non-venereal character. The physician has no concern whatever, with the morals of the situation; it does not concern him in the least degree how or where the patient became infected. It is his duty to treat the patient to the best of his ability, or if he feels unable to do the patient justice, to refer him to another physician who will give the case the thought and study that it deserves. The physician should not for one moment permit himself to minimize the importance of these venereal diseases; he should at all times remember that the venereal diseases are the most widespread and universal of all human ills, and that they enter more largely into the making or marring of domestic happiness than any other disease known to man.

Such is the view of the specialist, and such is the view that in my opinion, every practitioner ought to have. Those who deal much with these diseases, regard them

as among the most serious ailments with which men can be afflicted; they are stubborn and difficult to treat, and more often than we are wont to believe, they are absolutely incurable.

The specialist recognizes in these diseases neither crime nor vice nor sin, but disease, pure and simple, of universal prevalence, old as antiquity and apparently, as far as the human mind can judge, destined to be with us always. True, the immediate mortality from venereal disease is not very large, but the morbidity and loss to the state is very great. The damage done to the body politic by the diseases themselves and their sequelae, is without doubt, far in excess, from every point of view, of that caused by all other human ills combined.

The general practitioner, taking a less serious view of the situation, fails to recognize these facts. He seems to be more confident of his ability to cure a case of gonorrhea in the male, than the specialist whose large experience and trials and disappointments have made him wary of the pitfalls with which the road is beset. He also fails to realize that either gonorrhea or syphilis is complex enough in its numerous ramifications to tax a man's energies through a generous lifetime, particularly since we have been able to enter into the refinements of diagnosis and treatment through the more recent discoveries.

To emphasize the importance of the venereal diseases to the body politic, I shall mention certain features in detail, that are usually disregarded by the general practitioner. Referring to gonorrhea, it is well to remember that this is a purely local disease in the beginning, and that if the inflammation is confined to the anterior portion of the urethra, a cure may be ex-

pected in a reasonably short time; but it is far more important to remember, that any case of gonorrhea, be it ever so mild, is apt to flare up suddenly and run through the entire list of complications even to the extent of causing the death of the patient.

Let us give a moment to the most common complication of gonorrhea in the male—epididymitis. This is by no means a rare occurrence. Considered alone and without respect to other features of the disease, one would hardly be justified in calling this a serious complication, because we all know that the inflammation is self-limited, and though it is a most painful affection, it is not one that carries with it any immediate danger to life or limb. But let us not therefore assume that acute epididymitis is a slight matter. Granted that every practitioner knows how to treat this complication, how often does he realize what this apparently harmless inflammation has in store for its victim? It is well for us not to forget what this inflammation is going to mean to the patient years hence. Let us picture to ourselves a young woman deprived of her greatest birthright of motherhood, a home rendered unhappy and desolate, a virile man hopelessly miserable, because of the sterility brought about by this simple inflammation of the epididymis. Does it not lend an entirely different aspect to this otherwise simple complication, when we think of it as the most common cause of sterility in the male? Let us not also forget that the nodule left behind after the acute inflammation has passed off, may become the seat of a tuberculous infection, which in turn may become generalized and terminate fatally.

Gonorrheal arthritis, or rheumatism so-called, is another of the complications of this seemingly innocent disease, that is

worthy of our careful thought. In this complication the disease is transformed from a local to a systemic inflammation. It occurs often enough to impress the fact that it might develop without apparent cause not only during the existence of the active gonorrheal inflammation, but long after the attack has been forgotten.

It is well to bear this fact in mind, and in obscure joint lesions when a diagnosis seems hard to make, the discovery of the Neisser diplococcus in the prostatic massaged secretion will clear up any doubts that may exist. This joint involvement may be of slight degree or it may be sufficiently severe and extensive to destroy the efficiency of the joint and cripple the victim for the rest of his days.

Still more common and perhaps more serious than either of these complications is the occurrence of acute prostatitis in the course of gonorrheal urethritis. I believe that the prostate is involved in every case of specific urethritis in which the deep urethra is attacked; but the hurried practitioner devotes little attention to this organ; he is usually content when the patient's discharge stops and everything seems well. He forgets that the urine passed by the patient may be clear and sparkling and at the same time the prostate and vesicles may harbor gonococci innumerable, ready to awaken and set up a new inflammation when deposited on susceptible soil. There is little excuse for this. Every practitioner can examine the prostate per rectum, and the massaged secretion under the microscope. Nevertheless it is my experience that few go to the trouble of making this examination because of the attitude of indifference that I have alluded to.

Such a patient, after a cursory examination of the urine, is discharged cured and feels safe in marrying. Possibly he has been advised by his physician that it is not only safe for him to marry, but wise as well, so as to keep out of harm's way, and in this way an innocent young woman is sacrificed on the altar of indifference. In this connection let us not forget that conservative gynecologists tell us that from 65% to 85% of all the surgical operations performed on the pelvic organs of women are the result of gonorrheal infection; and a goodly proportion of these women are innocently infected in wedlock, by their husbands who thought they were cured of their old and quite forgotten disease. It is well that we remember these facts, in order that we may realize how serious this apparently harmless disease really is.

Another very important aspect of gonorrheal infection is found in the later sequelae of chronic gonorrheal prostatitis. To this condition we can ascribe the many cases of sexual neurasthenia, functional and organic impotence and sterility due to pathologic changes in the prostate and its secretion. Surely it is not necessary to dwell at length on these vital conditions; they all lead to the same goal and teach the same moral.

I need but mention the occurrence of ophthalmia neonatorum to bring to light another of the many tragedies of gonorrhea. It is stated on good authority, that there are in this country over 6,000 blind men and women who owe their blindness to gonorrheal infection at the time of birth. Does it not seem easy to have prevented these terrible infections, by adopting the proper precautions—not only at the time of the birth of the child, but also far back when the father was being treated

for his gonorrheal infection? A correct realization of the seriousness of this disease by his attending physician might have saved the sight of his child doomed to lifelong darkness.

There is one more item in these charges against gonorrhea, that I want to speak of. I refer to the occurrence of stricture of the urethra. As long as the patency of the urethral canal is not seriously menaced, stricture means little enough to the patient; but sooner or later he notices a more or less serious impediment to the passage of the urinary stream, which may become so marked as to produce complete urinary retention. The life of the patient is thus placed in jeopardy as long as there is this likelihood of urinary retention, and I beg of you to remember that it is not such a long leap from acute urethritis to stricture. The thing to remember in this connection is that every case of gonorrheal urethritis represents a possible stricture, and every chronic urethritis is a stricture in embryo—with all that the term implies.

I do not deem it necessary to enter into great detail in considering syphilis as a universal plague comparable only with tuberculosis and gonorrhea. We are all familiar with its terrible ravages, and we know how it may be transmitted by direct descent from parent to child. Surely such a disease is at least as serious and important to the social welfare as rabies or small pox or cholera, nevertheless immense sums of money and energy are spent year after year by the governments of the world to eradicate these diseases, but hardly a dollar is spent to control or minimize the damage done by this widespread black plague. I am convinced that this governmental indifference is due to the *laissez faire* attitude of medical men toward this disease, com-

bined with their unwillingness to deal publicly in any way with this "unclean" and "unholy" disease.

I trust that the point intended to be made in this paper has been made clear. All of us are thoroughly familiar with all that it contains, and I have not intended to present anything as new; my purpose has been simply to call attention to these venereal diseases as serious menaces to the welfare of the community and to impress upon all men in general practice the necessity of giving proper value to these diseases, not alone because of the diseases themselves but because of their sequelae and complications, which are even more serious and far-reaching than the primary diseases themselves.

The general practitioner owes it to himself and to his patients to take these ailments seriously, that new methods of diagnosis and treatment be adopted and utilized, that the patient be made to realize that he is suffering from a serious and important disease, the immediate and remote effects of which may affect his entire future life. The physician should explain the inherent dangers of the disease, and the likelihood of complications and their sequelae; but above all, the physician should realize that the responsibility resting on him is a great one. If this attitude is maintained towards these venereal diseases, and faithfully lived up to, we may safely hope to avert many of the domestic tragedies that are of such common occurrence in our daily work.

105 East Nineteenth Street.

The regular annual meeting of the American Medical Editors' Association will be held at St. Louis, June 4th and 6th, 1910. A large and enthusiastic session is promised.

THE MUSICAL EXTERNAL EAR.

BY

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It is commonly thought that persons who have the musical "gift" have a peculiarity of the auditory tract, which distinguishes them from ordinary folk. There seems to be an actual physical quality in the hearing of musicians whereby they differentiate tones with subtlety, and this quality is congenital. When two violins are supposed to be tuned in unison, yet absolutely are not, some musicians can recognize a difference in pitch of only one five-hundredth of a tone; and Landois, the physiologist, said a variance of one twelve-hundredth of a tone has been accurately appreciated. Certain musicians have the power of "absolute pitch"; when any note is sounded on an instrument they can immediately tell by the sound alone what the note is; they can take down a melody, as if from dictation, and in its proper key. Mozart thus obtained the score of an unpublished *Miserere* sung in the Sestina Chapel in the Vatican.

What this peculiarity of the auditory tract is has not been determined. It is thought that the nervous structures of the cochlea, in the internal ear, are an organ of special sense for the perception of those regular alternate rarefactions and condensations of the air that we call musical tones, and of those arrhythmic rarefactions and condensations that are noises. Beyond this opinion, still very doubtful, nothing is known concerning the special adaptability for the perception of music in the auditory tract. There is, however, a peculiar conformation of the external ear in musicians, first observed by Dr. J. J. Kinyoun of Washington, but never published, which is constant and readily perceptible.

The external ear is called by anatomists the pinna (wing) or auricle. The



Richard Wagner.



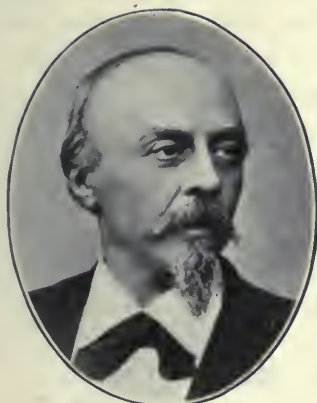
Paderewski.



Pietro Mascagni.



APOLLO OF THE LOUVRE.



Hans v. Bülow.



Aug. Wilhelms.



Balfe.

outer border of the pinna is the helix. This begins in the crus (stock, leg) of the helix, just above the meatus, or canal leading into the eardrum, and ends in the lobule. Between the helix and the cup-shaped depression, the concha, at the bottom of which is the meatus, there is a ridge, bifurcated above, called the antihelix. That bifurcation is named the crura of the antihelix; and the slight depression between these crura is the triangular fossa. The groove between the helix and the antihelix is the scapha (boat, boat-shaped). The prominence at the inner edge of the concha is the tragus (tragus, a goat—because of the hair which grows upon that part of the ear in middle life); opposite and below the tragus is a prominence, the antitragus, and between these points is the intertragic notch. Other depressions and prominences have special names, but these are unimportant here.

The shape of the concha (a shell) is the special phenomenon observable in musicians' ears. In these persons the concha is (1) *large*; (2) *deep*; (3) *rectangular*. The lowest border is horizontal, and at right angles with the helix, which makes the outer border of the concha. The photograph herewith of the Apollo in the Louvre shows such a concha.

In singers, even the noted artists, the lowest border of the concha is not seldom out of the horizontal line as this border goes back from the intertragic notch; thus forming a slightly obtuse angle with the antitragus (the ear of Mme. Emma Eames is an example), but this obtuse angle is not found in the instrumentalists. In some singers (Cavalieri, Schumann-Heink, for example) the lowest border is horizontal, but the antihelix slopes backward slightly.

Richard Wagner had a typical external ear of the musical form. In his case the lowest border of the concha made a sharp right angle with the antihelix. Wassily-Safonoff, the Russian composer, Rachmaninoff, Marie Mattfeld, and Cleofanti Campanini, who led the Metropolitan orchestra in New York, have this sharp angle like Wagner.

Ordinarily in musicians the lowest border of the concha is rounded slightly as it joins the antihelix. This is seen in the ears of Paderewski, Verdi, Ysaye, von Bülow, Balfe, Wilhelmj, Perosi, Tschaikowski, Parry, Massenet, Maud Powell, Elgar, Litloff, and innumerable others. It is noteworthy also that the lowest border of the lobule in musicians is commonly almost parallel to the lowest border of the concha, but this formation is not invariable. The only marked exception to this shape of the lobule the writer could find is in Joachim's ear.

The form of the concha described here is found in the David of Michelangelo, and it was evidently known to the ancient Greek sculptors; in some of their statues the helix and lobe form an exaggerated rectangular letter C.

In profile portraits of musicians made by painters, Mozart's, for example, this form of the ear may be lacking, because the painter does not always copy the unimportant ear as literally as the camera does. Photographs, however, are sometimes deceptive, as an inclination of the head apparently changes the real angles of the concha.

The accompanying illustrations are examples of the musical external ear. Liszt, Grieg, d'Albert, Leoncavallo, McDowell, de Beriot, Rosenthal, Lhevinne, Hubermann, Bauer, Mahler, the two Damrosches, are



Verdi.



Sir Arthur Sullivan.



Parry.



THE PINNA OF THE EAR.



Harold Bauer.



Tschaiikowsky.



Hector Berlioz.

other examples. It is a curious coincidence also that musicians almost without exception have large noses.

When, on the contrary, the ear-lines are vertical, and the concha is narrow, with little or no lower border, and the lobule is large and pendant, the person, no matter how intelligent he may be, lacks the musical sense, is tone-deaf. It is said the General Ulysses S. Grant was not interested in music, and he could not recognize old popular tunes. His ear-lines were vertical.

If a child has vertical ear-lines, it is useless to attempt to teach him music. One might as well try to make a pianist of a boy that has short, stubby fingers. Again, when a person with vertical ear-lines asks a musician to play an instrument the request is merely an act of patient courtesy, and the final applause is wilful mendacity or a sign of relief.

A CONTRIBUTION TO THE TREATMENT OF HAY FEVER.

BY

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Although much has been written on the subject of hay fever and numerous methods have been suggested for its treatment, none of these can be regarded in the light of specifics. This is not at all surprising when it is considered that in hay fever we are not dealing with a distinct pathological entity, but rather with a complex of symptoms having many sources of origin.

Much more is known concerning the exciting than the predisposing causes, the former comprising chiefly the pollen of various plants—in this country; particularly ragweed and golden rod—as well as dust and animal emanations. As regards the predisposing factors these are to be sought first in pathological conditions in the nasal cavities, such as the presence of spurs and deflections of the septum, hypertrophied turbinates, inflammation of the antrum, and also in a neurotic disposition.

In view of the diversity of factors concerned in the etiology of hay fever it is apparent that each case is a law unto itself and must be treated individually, ascertaining if possible the underlying cause. In a general way the cases may be grouped into those in which distinct pathological changes are found in the nose and those in which the hyperesthetic condition of the nasal mucous membrane is but a part of a general neurosis.

In both of these classes of cases the results of treatment, short of a change of climate, still continue far from satisfactory. When, therefore, my attention was called to the possible value of a special culture of the bacillus of Massol in this condition, through an article by Dr. H. Holbrook Curtis (*Merck's Archives*, January, 1909) I decided to give it a trial. Dr. Curtis in this article stated that the active solution of this culture had a pronounced effect upon the vaso-motor system of the nose, so that turgescient hypertrophies seemed to disappear and edematous conditions resulting from hay fever subsided. It may be mentioned here that the preparation of lactic acid bacilli employed in Dr. Curtis' experiments has since been introduced under the name of Massolin.

The results so far obtained by us have been most interesting and encouraging. We found that in those cases in which there were distinct pathological conditions in the nasal cavities, such as hypertrophic rhinitis, nasal spurs, polyps and sinus troubles, the use of this culture proved it to be almost a specific. Some of the cases were relieved immediately and others were greatly benefited. In those cases where the underlying cause was undoubtedly a neurosis there was not the slightest evidence of any benefit.

Although the removal of pathological changes in the nose when present in cases of hay fever is usually considered an essential feature of treatment, it has been found that in not a few cases the disorder nevertheless persists, thus showing that these lesions are to be considered only as contributory causes. It seems probable that in such cases the Massol bacilli either directly antagonizes the toxic element in pollen or so modifies existing pathological conditions as to increase the resistance power of the mucous membrane towards the morbid agent.

However, this is only a theory which is presented here for what it is worth.

The series of cases under consideration were all chronic, dating back in the most recent case eight years. All had been subjected to various operations or the usual treatment with adrenalins, oils, cocaine, etc., without relief.

In most of the cases, treatment with the solution of Massol bacilli was not required beyond several days and a most interesting fact was that the majority remained immune to the exciting cause without further attention. The following series of cases are illustrative:

CASE 1. Mr. M., an unusually well developed and robust athlete, suffered for nine years with prostrating attacks of hay fever, the irritant in his case unquestionably being the pollen of golden rod. He had chronic nasal trouble, including nasal spurs, hypertrophied turbinates and a peculiarly sensitive mucosa. He had been under treatment for several weeks with various sprays and douches and had submitted to operative treatment during previous years. At the time the Massolin treatment was begun he was absolutely incapacitated and unable to undertake any physical exertion. Spraying with Massolin was commenced in the afternoon, three applications being made before bedtime. This resulted in the first night's good sleep since the commencement of the attack. He felt so well the next morning that he returned to business and continued treatment in a crude manner by means of a cotton swab. At the end of forty-eight hours all symptoms had subsided. He discontinued treatment and remained free for the remainder of the season. In this case the immunity was very surprising, as he is an ardent golfer and spent every spare moment upon the links which were lined with golden rod in full bloom.

CASE 2. Sister D. had been a victim for over eight years of most pronounced hay fever symptoms in which the irritant was undoubtedly the blossom of hay. Her history for some eight years back had been one of most pronounced incapacitating attacks during the blossoming of hay. She had been confined to her room for some days when treatment with Massolin was established, beginning on a Saturday afternoon. When visited on Sunday morning the change in the facial expression especially in connection with the eye disturbance, was most marked and by Monday she was entirely free from all symptoms. In this case the patient deliberately exposed herself during the harvesting of the hay without any relighting up of the usual train of symptoms.

CASE 3. Mrs. W. presented the usual train of symptoms, the exciting cause being undetermined. She had suffered for years and had submitted to various opera-

tions for the relief of this trouble. She was under the care of a conscientious and competent physician who, after trying practically all of the known remedies, as a last resort, put her on Massolin applied by spray. The results in this case were immediate though it was necessary to continue treatment on and off throughout the season.

CASE 4. Mrs. H., a trained nurse, had been a sufferer for many years and had undergone very extensive cleaning out of the nasal passages. At the time of commencement of treatment with Massolin she was practically confined to the house and unable to attempt any professional work. Forty-eight hours' treatment established a cure that was permanent for the balance of the season.

CASE 5. Miss S., a trained nurse, presented the usual train of symptoms. At the time of this attack she was relieving another nurse as superintendent of a hospital. She was suffering so intensely as to be practically on the sick list herself and with an experience of many years' trial of various remedies welcomed any new treatment that offered hope. In this case the results were just as satisfactory and apparently permanent as in the previous cases.

In addition to these, we have knowledge of quite a number of other cases in which the treatment was most beneficial, but of whose subsequent history we are without knowledge.

To recapitulate, we must bear in mind that neurotic cases are not in the least benefited. Cases with pathological nasal conditions are benefited only upon proper application of the lactic bacilli solution directly to the diseased area.

As to the method of use the nasal tract should be washed out with warm normal salt solution, cleansing it thoroughly, and then by means of spray, swab or canula, Massolin liberally applied to the involved mucosa, repeating the application two or three times per day till the symptoms subside.

DECIDUOMA MALIGNUM.¹

BY

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Deciduoma malignum is a rare disease. In the fifteen years of the author's practice he has come in contact with only one case. There are still many unsolved problems connected with this subject which can be made clear only by accurate clinical and pathological studies of those cases which now and then come under our notice.

This condition was first described by Säger in 1888, when, before the Leipsic Obstetrical Society, he reported two "unusual cases of abortion." His investigations at that time led him to designate the growth as deciduoma malignum, deciduoma metastica malignum, describing it as belonging to the sarcoma group with the power of rapidly forming metastases. This statement must be qualified by the following: In 1877 Chiari reported cases of malignant neoplasms following parturition, calling them carcinoma, but to Säger must belong the honor of first describing the condition as a new and separate entity. Since then different observers have reported cases under various titles, for example, deciduoma malignum, chorio-epithelioma, deciduoma cellularis, sarcoma, syncytial carcinoma, etc.

The term deciduoma malignum has been abandoned by some and it seems to be conceded that this growth composed as it is of Langhan's cells and syncytium arises from the foetal ectoderm, but it seems best to the author to still use the

¹Read before a stated meeting of the Kings Co. Med. Soc.

older term until further study by those best qualified to speak on the nomenclature of the growth, the pathologists, who can give us a term actually suitable to the condition and thus save a multiplicity of terms.

Teacher in his review of the nomenclature, considers the term "syncytioma" bad, for the reason that while it points to the site it does not refer to the characteristic elements of the tumor. He considers the term chorio-epithelioma the nearest correct from its indication of the origin of the growth, but he also thinks that the term deciduoma malignum should be retained as a clinical name.

When it comes to asking the pathologist to act as a deciding factor as to whether or not a radical operation should be performed, he, quoting from Schmauch, is placed in a peculiar position in considering these particular growths. Changes in the structure and the arrangement of the epithelium, new formation of glands in the uterine mucosa, at times force him to point out his suspicion of malignancy to the clinician, but the deciding factor in such suspicious cases rests with the clinical observer. Similar phenomena are observed in the glands of uterine and cervical polyps. Although the pedicle shows normal structures, the polyp is often described as carcinomatous. This diagnosis is, to say the least, hasty. Such a polyp is, on account of its location, subjected to all kinds of insults; mechanical and chemical, which might possibly produce such suspicious changes in the glands.

The pathology is placed in the same position of all those proliferations which originate under the cell-covering of the villi which might develop a chorio-epithelioma malignum. Many probably will

maintain that the mere suspicion of such a growth should be sufficient indication for the removal of the diseased organs. The number of cases of chorio-epithelioma observed is already so large that science is able in most cases to differentiate between simple chorio-epithelioma proliferations and chorio-epithelioma malignum. The latter is looked upon as a product of pregnancy, foetal epithelioma of the villi covered by this epithelium are constituents of this growth. Both structures, however, are also found in normal pregnancy and its sequelae, and especially after hydatid mole. As far back as 1898, Carl Ruge, in discussing a paper by Veit upon deciduoma malignum pointed out that clinical experience favors us in differentiating a benign and a malignant syncytioma. This statement, it appears, *has not been generally appreciated*. At any rate the literature shows a number of cases of chorio-epithelioma reported by good authors in which an extirpated uterus proved to be normal. Chorio-epithelioma malignum, tending to a fatal issue, possesses many of the features of a malignant growth and is considered such. Its cells have a highly invading and destructive power, but, like other malignant growths, it presents rapid self-destruction. The malignancy is also proved by the strong tendency to produce metastases. It is the fundamental change of biological character which stamps malignancy upon the carcinoma cell.

It was formerly supposed to be due to the degenerative changes resulting from a mole pregnancy. Later investigations, however, have shown that the mole is not a necessary factor in its development. It follows a normal labor, abortion, ectopic gestation or a hydatid mole. It has also occurred during a pregnancy. A woman

suffering from this condition will present a history similar to the following. From a few weeks to months after the termination of some one of the forms of pregnancy, there will be repeated genital hemorrhages increasing in severity.

"The hemorrhages will not be characteristic of mere menorrhagia for the flow depends upon the invasion of blood vessels by cells comparable to those of any malignant process, with perhaps the most rapid spreading of any form of such growths." (Stone).

These hemorrhages cause marked anaemia, the clinical appearance of the anaemia being that of a pernicious anaemia. There will be a watery discharge, sometimes offensive. If the uterus is curetted a varying quantity of soft grumous material is removed but the curette gives but temporary relief, the hemorrhage soon returns. The diagnosis, therefore, if you are on the watch for the condition, is easily made and should be confirmed by the pathological findings. You have as a summary:

1. The history of some form of pregnancy.
2. Subsequent irregular hemorrhages which are not amenable to ordinary methods of treatment and which recur after repeated curettings.
3. The presence of a dirty, sanguineous discharge during the intervals between the hemorrhages.
4. Anaemia, with rapid loss of flesh and strength, with a cachectic appearance.
5. Symptoms due to the metabolic deposits.
6. A pulse characteristic of anaemia.
7. Pain.
8. Fever not unusual.
9. The physical findings in the pelvis.

Uterus usually enlarged, with os patulous. When it is patulous, as it is in advanced cases, the exploring finger finds the characteristic soft nodules. The mortality rate is very high whether operated upon or not, although not as high as in former years, due to the fact of its earlier recognition followed by prompt operative measures. The only treatment is complete extirpation of the uterus as soon as the diagnosis is made, and this should be done even in the suspected presence of metastatic deposits. Veit has reported cases in which symptoms of secondary deposits have disappeared after the primary tumor has been removed.

Undoubtedly many of these cases go unrecognized but those of us who attend obstetrical cases should add to our list of the risks of maternity the condition described above.

Report of Case: R. N., admitted July 2nd, 1909. Native of Russia, married 12 years. Had four children. One child died in early infancy of malnutrition. History of one probable miscarriage given by the patient.

One month before admission to the author's service at the Jewish Hospital, this patient had been treated in another institution in this Borough for two weeks. The patient had previously been curetted at home for uterine hemorrhage. She had remained in the hospital for two weeks and was treated locally and medically. The surgeon on service in that institution was kind enough to give me the following history. The patient was admitted and discharged as a case of spontaneous abortion. At the time of discharge from the hospital hemorrhage had ceased, the cervix was almost closed, uterus was of normal size, retroverted and the adnexa normal. They had obtained the following history previous to her admission; that the patient twelve or fourteen days before, thinking herself about three months pregnant, had a sudden hemorrhage from the vagina. She consulted a physician who curetted her. Three days after she was still bleeding and he

advised another curettage. On the night before admission she suddenly expelled a foetus and some membranes. Shortly after admission she was given a uterine douche of iodine solution. Some stringy material came away but no placental particles, expelled a few clots after that but was discharged with the condition as described above.

Her menstrual history on the author's service was as follows: Began at fifteen, regular, lasting three to five days with slight pain which subsided after the flow had commenced. Her last regular menstrual period was March, 1909.

Family History. Father died of cancer of the stomach at the age of 70 years. Mother died of dropsy at the age of 69. Has one brother, living and well; has lost

soft, retroverted to a second degree. Right fornix empty. Left fornix, considerable thickening at the base of broad ligament.

July 10th, 1909, perineorrhaphy and curettage.

Pathologist reported that curettings showed small spindle celled sarcoma.

Results of the blood examination were as follows:

On July 8th, leucocytes 12,000, polymorphonuclears 65; July 16th, erythrocytes 3,200,000, leucocytes 14,000, hemoglobin 55%, polymorphonuclears 56; on the 30th the hemoglobin was 70%; on Aug. 7th, erythrocytes, 3,800,000, leucocytes 9,000, hemoglobin 75%, polymorphonuclears 62; on Aug. 16th, hemoglobin 80%; Aug. 19th, erythrocytes, 3,500,000, leucocytes, 8,800 hemoglobin 70%, polymorphonuclears 58.

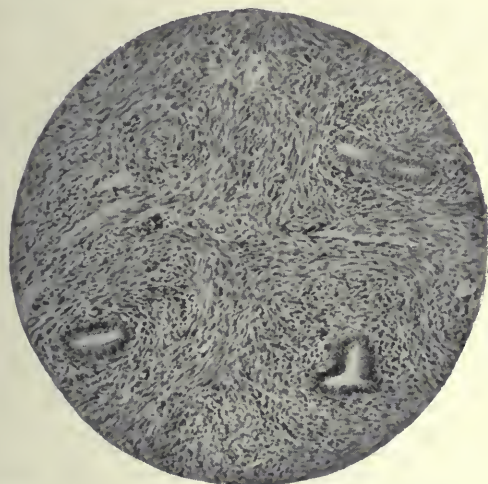


FIG. I. LOW POWER VIEW OF CURETTINGS.

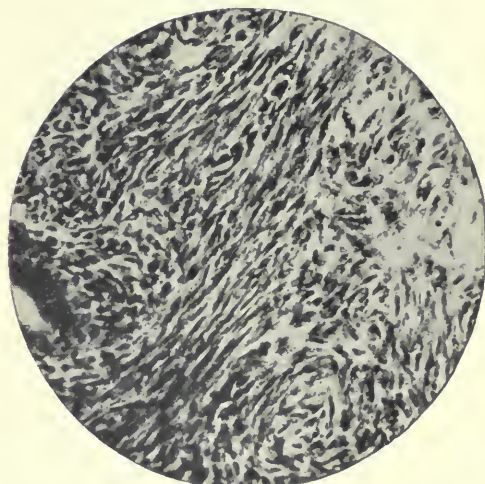


FIG. II. HIGH POWER VIEW OF CURETTINGS.

nine sisters and three brothers from unknown causes of death.

Entered the hospital with a history of repeated hemorrhages for last eight weeks; appetite poor, slight diarrhoea, increased frequency of micturition; fairly well nourished, but extremely anaemic. Heart and lungs negative. Abdomen protuberant and relaxed. Umbilical hernia admitting end of middle finger. Vagina relaxed with gauze presenting in vulva. After removal of the gauze there was considerable relaxation at the vaginal outlet with a rectocele. Cervix points downward and backward. Uterus slightly enlarged,

On July 20th a pan hysterectomy was done, and the patient was discharged from the hospital recovered, with the exception of considerable anaemia.

The following is the report of the pathologist of the tissue submitted for examination, for which work and the microphotographs I am indebted to Dr. S. R. Blatteis, pathologist to the Jewish Hospital.

Plates I and II. Curettings: More abundant than usual, showing microscopically the glandular elements much diminished in number and atrophied while the interglandular tissue exhibited a most active proliferation, bundles of small spindle

cells running in all directions with blood spaces between them.

One piece of tissue consisted mainly of irregular large epithelial cells, imbedded in a homogeneous protoplasmic mass in the substance of which were large blood spaces and evidence of round cell infiltration. This piece of tissue while suspicious was insufficient for a definite diagnosis and was considered for the time being degenerating and necrotic remains of decidua.

Uterus. Larger than normal with the lower segment and cervix hypertrophied while the upper segment including the fundus presented on its inner surface a somewhat granular irregular appearance;

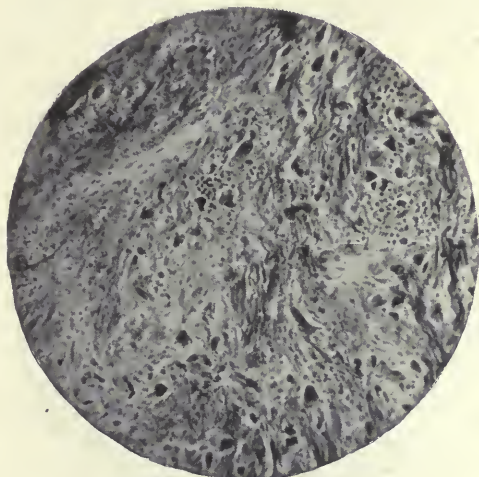


FIG. III. HIGH POWER VIEW OF DECIDUOMA MALIGNUM SECTION FROM UTERUS REMOVED. AUTHOR'S CASE.

its consistency was very friable. On section the same condition was present throughout the thickness of the wall of that part of the uterus.

Plate III. Microscopically are seen uterine muscle fibres in all stages of fragmentation and degeneration caused by the infiltration of larger and smaller protoplasmic masses containing irregular nuclei with no distinct cell body producing a picture closely resembling the large giant cells of sarcoma; this corresponds to the description of the syncytium.

Another type of cell present is that resembling the decidual cells; these are large with a distinct cell body and large nucleus

in various stages of mitoses and granulation¹. Areas of leucocytic and round cell infiltration complete the picture.

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¹They occur usually in groups, an occasional group filling in some of the numerous blood spaces. They correspond to the description of the Langhans cells.

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CORRESPONDENCE.

THE MOUSE THEORY OF PNEUMONIA.

New York, May 13, 1910.

To the Editor *American Medicine*:

Your highly esteemed journal of the April issue contains a number of interesting papers on pneumonia. I was greatly surprised and mortified, however, to see

that not a single contributor has thought it worth his while even to mention the mouse theory of pneumonia. In a number of articles in the medical press in this country and abroad I have shown that pneumonia cannot be communicated direct from one human being to another, because the pneumococci or the diploanceobacillcocci as I called them, for they are so polymorphous that the latter appellation defines them better—derived from the expectoration of human beings are not virulent enough to cause a general diploanceobacillcocci infection in man. I have reported the finding of these microbes in the dead bodies of house mice, and by taking into consideration the geographical distinction of pneumonia and other facts in connection with this disease I drew the conclusion that house mice are the main factors if not the only ones in disseminating this disease. I have shown indeed that mice cause also the diseases due to the colibacilli group and probably a number of other microbic affections. (See "Le Rôle jeu par la souris dans la propagation des maladies à diplocoques et a colibacilles," *La Presse Medicale*, 11 Sept., 1907.)

As long, however, as I had not seen my findings corroborated by another investigator I had not been sure whether my zeal had not carried me too far, as is unfortunately the case with many investigators, who while thinking to have discovered something new or important have in reality made a Pickwickian discovery.

But not long ago an Italian investigator (see abstract in *J. A. M. A.*, Jan. 8, 1910), also states to have found pneumococci in house mice. He claims to have found many other bacteria, such as diphtheria bacilli in house mice, a thing which I perfectly believe, as I foreshadowed as much in my French article referred to above. Not long ago I have found the bacillus pyocyaneus in a dead mouse, which microbe proved to be virulent to other mice.

In view of these facts it seem altogether inexcusable that writers on pneumonia should omit mentioning this important factor in the etiology of the disease in question. It has been recently found that the mosquito theory of yellow fever had been advanced by a French physician practising in South America some fifty years ago.

Every important discovery is said to take from fifty to a hundred years to be re-discovered anew and taken up. Will the mouse theory of disease also take that proverbial period of time?

The wisdom of mankind seems to be such that no attention is paid to any discovery, however plain and plausible it may be, unless it has on it the tag of some institution bearing the name of some oil king or simple king or of some famous dead man. What an amount of ink and paper used up on the Wassermann reaction! Whereas the contraction of venereal diseases is simply due to vice, ignorance and outrageous social conditions, and the very existence of such diseases is a condemnation of our so-called civilization. Prevention is the most important thing, especially in communicable and preventable diseases. Of course the medical profession will suffer. But most of the physicians or at least a great many of them are already half-starving anyhow; perhaps by making conditions a little worse still, the doctors will get wiser and will exact remuneration from the community for preventing diseases instead of for curing them.

Meanwhile will innumerable precious lives be lost before the proverbial hundred years pass and the mouse theory of disease is taken up? To judge from appearances it is quite likely to be the case.

E. Palier, M. D.

OBITUARY.

THE DEATH OF DR. GOELET.

Dr. Augustin Hardin Goelet died at his home in New York on Tuesday, April 26th, from disease of the heart, in his 57th year. Dr. Goelet was born in North Carolina, received his early medical education from his father and graduated from Bellevue Medical College in 1874, since then and up to the time of his death, he practised in New York City.

His labors in the field of gynecology, his teachings and writings have stamped him a man of superior knowledge and fine attainments.

His early efforts to introduce electricity in the treatment of diseases of women were remarkably successful and the advancement

in this direction is largely due to his energy.

He was, we believe, one of the first, if not the first President of the American



Electro-Therapeutic Society and an Honorary member of the original French Association of Electro-Therapy. As professor of gynecology in the New York School of Clinical Medicine, a post which he held for many years, he was honored and respected by his pupils and associates, both for his profound diagnostic ability as well as for his personal character and unflinching Southern courtesy.

He was a man of many friends, exceedingly sociable and ever ready to assist the younger men in the pursuit of their profession. By his death the profession loses a valuable man, a skillful surgeon and one who was always ready to give his best efforts. His friends lose a friend.

E. R.

RESOLUTIONS.

At a regular meeting of the Clinical Society of the New York School of Clinical Medicine, held on May 3, 1910, the following resolutions were adopted:

Whereas: We have learned with deep sorrow of the sudden and untimely death of our esteemed associate and colleague, Dr. Augustin H. Goelet, who for more than twenty years had given his best efforts to this institution, and

Whereas: Professor Goelet was a man of high honor and integrity, beloved and respected by all who knew him for his geniality, his sincerity and his many scholarly attainments, therefore be it

Resolved: That we now record this our last sad tribute to his memory, and join

in expressing to his bereaved family our sincerest sympathies, and be it further

Resolved: That these resolutions be spread on the minutes of this society, and that a copy thereof be transmitted to his family and to the medical press, as a token of our respect and as reverence to his memory.

Abr. L. Wolbarst, M. D.
Edward L. Kellogg, M. D.
Theodorus Bailey, M. D.
Committee.

SOCIETY PROCEEDINGS.

EASTERN MEDICAL SOCIETY.

The regular monthly meeting was held March 11, 1910, President A. J. Rongy in the Chair.

Presentation of a case of

CONGENITAL, UNILATERAL, BONY OCCLUSION OF THE POSTERIOR NARES.

By John Guttman, M. D.

Chairman and Gentlemen: Up to 1890 there were only 25 cases, up to 1900, 50 cases, up to today only about 100 cases reported. It is rare enough to warrant the presentation of such a case. There is not much to describe, and the actual condition is more to be seen and felt. One nostril is obstructed. It is impossible to pass the probe as far back as in the other nostril. We will feel quite a bony obstruction and to make it more sure, if we blow in with the Politzer bag, the air will not go down this side of the nose but comes back. It is a positive case of bony obstruction of the nose. The question is whether it is congenital. In so far as there is no history of inflammation, specific infection, or operative procedure, and inasmuch as it has existed as long as the patient can remember, it is probable that it is a congenital obstruction. The subjective symptoms are impaired breathing, anosmia and patient is unable to evacuate mucus. It must be syringed down.

Objective symptoms. A high arch of the palate is usually found in these cases. Laryngoscopically on one side the posterior nares is closed by a diaphragm which has a little ex-tirpation or a little roof in the middle, and some blood vessels running on it and the other side is patent. We can see quite far in the lower and middle turbinated bodies and the usual picture. On the affected side we can see nothing.

Discussion by Dr. Bowser: Dr. Guttman says one hundred cases have been reported. I have seen three cases which were not reported. One case was a child. I made the observation by chance. I was showing how to blow out the nose and when I blew, I found nothing came out. I put in a probe and felt the bone. One

case was a lady out of town. I removed the turbinate and thought she should feel well. I found a membrane was present and she couldn't breathe. I made an opening with the forceps. It was membranous.

Discussion by Dr. John Guttman. As regards children, in one case of a new born child, both sides were occluded. To save the child's life, both were opened.

Regarding treatment, I cannot go into detail as I desired to show the case first. I will try to perforate either by drill or other method and if not successful, I will try to make a communication. The trouble is that it does not stay open long, so it may be necessary to make a communication with the other nostril.

Presentation of a Pathologic specimen

CAST OF THE ENTIRE MALE URETHRA, SHED AFTER ACCIDENTAL CAUTERIZATION WITH STRONG SILVER SOLUTION.

By A. L. Wolbarst, M. D.

The accident is of such unusual character that it is interesting. Patient aged 24. He had anterior urethritis. In August, 1908, by a transposition of two bottles, the anterior urethra was injected with 10% silver nitrate. A warm salt solution was prepared and the bladder was thoroughly irrigated and the patient was given some solution to use at home. For four days there was no evidence of trouble. On the fifth day the urine was cloudy and there was evidence of inflammation. There was no pain of any kind. The entire urethra was being copiously irrigated twice a day with salt solution. On the fifth day its reaction began. Pain was at the neck of bladder, he had slight temperature and the urine was tinged with blood at the end of urination. There were numerous broken down leucocytes but no bacterial elements. There was more or less constant tenesmus and urinary urgency. The patient then entered the G. U. service at the Mt. Sinai Hospital. In the hospital, the temperature was 102.3, pulse 88, respiration 24, urine 1022, no albumin, epithelial and pus cells negative as to gonococci. Superficial burns from the silver on the scrotum and thighs. No polyuria. Complained of vomiting on night previous to entrance.

Tongue coated and moist, glands and inner surface of prepuce red. A slight muco-purulent discharge oozed from urethra. No gonococci in the discharge. Patient was put to bed, the urethra irrigated with warm boric acid and urotropin given internally. In one week improved. Suffered from purulent urethral discharge only. No gonococci. Continued to improve. Except for pus the patient was normal. The introduction of sounds into the urethra was then considered but it was deemed unwise. A few days later, i. e., three weeks after the accident, a dark tenacious mass appeared at the meatus. With the aid of dressing forceps, it came away, without any pain or difficulty. Three days later another came. Regeneration of the mucosa was going on, it was apparent.

It was important that the canal should be kept distended so the raw surfaces should not come together, and to keep them constantly lubricated, it was deemed wise to use medicated bougies. They were used five weeks continuously. One was inserted after the other. In this way the walls were kept distended. He continued to improve and in about two months after the accident, a sound was passed. I found 21 French would pass. Gradually dilatation occurred and 28 French was taken in a short time. Later two contractions occurred. During the past year, he has been given the sound once a month. The urine is clear, and the old gonorrhoea is cured.

A transverse section of the urethral mucous membrane has been examined. It is an annular band composed of necrotic tissues, with cells indeterminate because of necrosis. There are areas suggestive of capillaries. It is undoubtedly necrotic tissue. In spite of the extensive destruction of the necrosis, new mucous membrane formed. Contraction occurred only at two points in the anterior urethra. The urethra came off in two portions.

Discussion by Dr. A. E. Isaacs. This is a very interesting case. What interested me was the fact that the author seemed to imply by his paper that the mucous membrane was destroyed. I believe he said that new mucous membrane had formed. If the mucous membrane was destroyed, the endoscopic examination would show scar tissue, not mucous membrane. Mucous membrane is not going to regenerate itself, therefore it strikes me that this slough does not consist of the mucous membrane but of a diphtheritic exudate on the mucous membrane and I think that supposition is confirmed by the pathological examination.

Another point. I do not understand what a 100% solution of nitrate of silver is.

Discussion by Dr. A. L. Wolbarst. The entire mucous membrane was not destroyed. I think some was left behind and I think the tendency is to throw out cells and create a new membrane. The microscope shows pretty clearly I think that there is necrotic tissue. The only thing possible is the inner surface of the urethra. It must have been mucous membrane. How could it be anything else? I have good reason to think it regenerated itself as it passed on.

Papers by Drs. Ware, Isaacs, Berg, Syms and Goelet.

Discussion by Dr. Eugene Fuller. I was very much pleased at being asked to come down to you and discuss these papers although I consider it a pretty large contract to discuss such a large number of excellent papers, which cover such an extreme range of subjects. The first paper of Dr. Ware's I was extremely interested in because so few around here are apt to give litholopaxy, the crushing operation, the place it deserves. As a rule in uncomplicated cases of stone there is too much cutting. But the operation of litholopaxy depends on the sense of touch rather than sight and a good many expert workers are not apt to depend enough

on their sense of touch, but I think if one will practice the operation and get the sense of touch, he will have little difficulty with it. Of course I do not believe in operating in complicated cases as where a stone lies in cul-de-sac. A crushing there is a make shift operation. The thing to do is to remove the cul-de-sac where urine cannot decompose and then we will not get a stone. We can do a great deal by litholopaxy. We may get a hard stone and then we can do a good deal. One of the hardest cases I had, I removed ten ounces at one sitting of hard urate stone. The old gentleman had a good deal of a cul-de-sac and unfortunately had a son-in-law who was a doctor and he had made a very cut and dried contract and, after operating about an hour and removing four to five ounces, I thought it was time to stop and come again. The son-in-law wanted to know if it would be the same price and I said "No," and he said "Keep on now and remove it." The old gentleman got entirely well.

There is one point about the symptoms in classical cases. There are classical symptoms as pain at the end of the stream especially radiating at the end of the urethra and pain on motion. There are cases however where there is no irritation and nothing which indicates trouble as far as the bladder is concerned, and where the urine is perfectly clear. I have found large mulberry calculi where the urine was clear. We all dread to get these cases in old men where the stone lies in a cul-de-sac, and there is residual urine and where the bladder does not squeeze the stone down. Of course this is not a common condition of affairs.

In connection with Dr. Isaac's thorough paper which I will not go over a great deal, the only point I would emphasize is caution in using instruments in tuberculosis, and always bearing in mind the frequency of urinary tuberculosis. It is a very frequent thing in this city and if any man has the very early symptoms and has an instrument put into his bladder, a series of distressing symptoms is likely to be started, giving rise to a great deal of distress. Some time ago, I had a case illustrating that. He happened to be a lawyer who came to me with something of a discharge. He thought he had exposed himself. It was in the summer time and the family were away. He had gone to an apothecary shop and secured a solution which was strong. I examined and could find no gonococci. I asked him about a history of tuberculosis, whether he had had tuberculosis, and he said, "No," it was not in that direction at all. I gave him something to take by mouth and told him to come back and the discharge had disappeared. There were only shreds. I told him he had some lesion of the urethra which became stirred up by excessive coitus and by the treatment which the druggist gave him. He came back later and I explored with an instrument and drew blood from the bulbous portion of the urethra and told him he would require treatment. He came back the next time and was straining and asked if the instrument was clean. He

couldn't see how he got in such a condition unless the instrument was not clean. His coming that way made me think of tuberculosis, because to get such an extreme reaction after careful manipulation was almost pathognomonic of tuberculosis. I asked again in regard to tuberculosis and he said, "Professor Loomis used to take care of me when a child and they said I would not live and sent me to the mountains and everybody died of tuberculosis in my family." I looked in my note book and noticed he had told me he never had that. On reminding him of his former statement, he said he liked to forget that. I remarked that that let me out about the dirty instrument. We sent him away and in about a year he "straightened out."

Many of the cases will strain unduly on the cystoscope and cause trouble. We must be careful about it. I put patients under perfect anaesthesia for cystoscopy so it can be done without any straining.

About operations in tubercular conditions in the genito-urinary tract, we should be conservative and get rid of the idea of righting the matter of tuberculosis by the cutting. I don't think I can cut tuberculosis out of a patient. If patients are doing well and not suffering from too much discomfort, we can treat them the same way as in treating the lung. I don't believe in taking the kidney out where we can simply demonstrate the tubercle in clear urine by some method of catheterization. I think there must be some more trouble before operation. I don't believe we ever give comfort by cutting into a tubercular kidney which is suppurating. The kidney should be either left alone or taken out. In castration where there is tuberculous epididymitis, we should be conservative and save the body of the testicle. It is very rare that tuberculosis attacks the body of the testicle. It almost always attacks the epididymis and if we remove the epididymis and leave the testicle, it will thrive as far as the size is concerned and as far as the man's vitality is concerned. I had a man from whom I removed the epididymis and he was so comfortable that he said he was going to name the first child after me. It might be said that where the epididymis is affected, unilateral operation may be performed but usually the other epididymis becomes affected later so it is wiser to be conservative.

When an apparently benign papillomata is removed, its place will often be taken by one which is malignant. Cases where there are little papillomata situated all over the bladder are the ones which are extremely hard to manage. When we open the bladder and the organ collapses, and we scrape, we cannot clean the trigone thoroughly because they are very delicate and when we examine later we will find we have left some. If we distend with air or water and scrape and use adrenalin solution to prevent hemorrhage, the work will usually prove satisfactory.

What we can do with high frequency currents, I never get very excited about. When I was young and was an assistant of Dr. Keys

and was sent to follow up the Newman method of treating with electricity, I became very much discouraged with the results.

I have done on several occasions a quite extensive vesical resection in the removal of neoplasms. Perhaps I have not been quite as scientific and careful as Dr. Berg in opening the abdomen but I remember in three cases, where, opening the bladder supra-pubically and seizing the neoplasm on the base and pulling on the pedicle and seizing the bladder below and lifting the whole thing right out of the opening, I then have, without reference to the abdominal cavity, impaled the whole mass to hold it. Then I have cut away the bladder walls, tied off with transfixion sutures, and then have gone over it again to make it tight; finally cutting off the stump and leaving the heavy sutures outside until they came away. The first time I was afraid I would get leakage of urine into the abdominal cavity if the sutures did not hold. The first case came back four years afterwards and I found a little growth starting in the scar and I cut that out and then a year after that I heard from him and he was perfectly well. Of the other two cases, one lived eight months. It was a case on which I was doing a prostatectomy and found there was a growth on the base of the bladder independent of the prostate. I took them both out and the man was cured and went seven months without trouble and then began to get recurrent symptoms and finally died of blocking of the ureters.

The operation of lumbar nephrotomy I have done three times in the past one and one-half years and I didn't do the operation until the ureters had become absolutely blocked and until the symptoms were very uraemic and there was a good deal of pyonephrosis and two of them died promptly and one lived three or four months and if he had been a millionaire and changed his will, it would have been a very good result. In the cases of hydronephrosis they died pretty comfortably as a rule and didn't care for operation.

Discussion by Dr. Ralph Waldo. Dr. Goelet's paper in reference to his treatment of the urethra. I am very glad to hear him say what he said on that subject and I am very glad to hear him speak as he did of the tincture of iodine. I believe the two remedial agents most efficient are iodine and silver nitrate. I never had very good results from the other preparations of silver.

Another important point in the treatment of a diseased urethra is to look at the openings of the Skene's glands. We will frequently find them quite marked and will frequently treat these patients indefinitely with little result unless we take a pair of scissors and cut open the orifices of these glands. It can be very easily done by using a little cocaine.

Another important point. In examining women especially those who have given birth to children, we may at first sight think there is quite a good deal of inflammatory disease within the urethra, while often it is an open meatus and a protrusion of the lining mem-

brane of the urethra itself and that frequently will give rise to very disagreeable symptoms as far as the patient is concerned. We can make applications to a urethra and meatus of that kind for a very long time with very slight if any results and patients will continue to pass urine and urination will be very painful. Only one method is efficient in curing. It is classical pinholding of the urethra, that is, making an opening from the urethra into the vagina not including the bladder and passing a sound and drawing the excess through the opening and back from the meatus and stitching it in place. I have seen most prolonged results in cases of this particular type.

As to treatment of stone in the female bladder. Fortunately it is a very rare occurrence but when we do meet one, the opening in the urethra is usually short and it can be very easily dilated. In fact there are some gynecologists who are quite in the habit of sticking the finger into the bladder through the urethra. One man did this frequently and nearly always dilated the urethra and examined the bladder with the finger. This is pretty bad surgery as patients continue for years to pass urine too freely. At any rate the stones can usually be easily crushed, if not it is possible to make an opening through the vagina and close it up.

Discussion by Dr. A. L. Wolbarst. The subject has been so thoroughly and ably discussed this evening that there is very little to be said and I believe the best wishes of the society will be conserved by not discussing any further.

Discussion by Dr. Charles Goodman. The Society is to be congratulated upon this excellent expose of this subject. I will touch on only one or two subjects.

As for Dr. Ware, while I am in accord with most of his statements, I am at variance with a few. With reference to the question of litholpaxy for vesical calculus, I can never reconcile myself to learn the technique of that operation simply because I could never see why I should spend two hours removing a stone when the same thing may be accomplished in a few minutes through a suprapubic cystotomy with local anaesthesia and have the patient out of bed in five or six days. A suprapubic cystotomy I have found to be a simple and safe surgical procedure and my experience in 25 or 30 cases has so far been successful in that I have had no mortality and have only had the best results. This is at variance with the figures of Dr. Ware who claimed a mortality rate of 14%.

With reference to tumors of the bladder, I cannot help but cite one or two experiences I have had with these tumors which I think are of sufficient importance to emphasize some of the points brought out by Dr. Syms. The difficulty of establishing the diagnosis as to malignancy of tumor of the bladder is extreme. Some two years ago a man was referred to me for haematuria and painful and difficult urination. He had suffered in this way for some time and an examination with the cys-

toscope revealed a carcinomatous growth. I operated on him, performing a suprapubic cystotomy and removed the tumor thoroughly. After excising the base, it was cauterized. The patient made an immediate recovery and I was congratulating myself on the result when a year later the man returned with recurrence of haematuria and examination revealed that he had recurrence of the growth which proved to be a most malignant form of epithelioma in spite of the fact that my pathologist after examining the original tumor reported to me that it had all the characteristics of a benign form of papilloma. So in these cases the prognosis has to be exceptionally guarded in view of the fact that these tumors while apparently benign, very frequently prove to be malignant growths.

Prostatic obstruction. My experience with prostatic obstruction is limited to eleven cases. All were operated on through the suprapubic route. I have had no mortality. In all the cases the function of the bladder has been completely restored and the patients have all had an absolute recovery from their former symptoms. The question of operative procedure and prostatectomy I believe to be more or less a question of personal equation. Some men like the perineal route and some the suprapubic. I believe there is an advantage in being able to operate on these old fellows in two stages, making a suprapubic incision with local anaesthetic avoiding shock, and doing the removal of the prostate at a secondary sitting, thus securing a happier result and subjecting the patients to the minimum of risk.

ETIOLOGY AND DIAGNOSIS.

The Diagnosis of Typhoid Perforation.¹

If reliance is to be placed on the symptoms that may or should be present, says Whiting, the diagnostician very often will be led astray. Pain is probably the most constant symptom, in typical cases being sharp and stabbing, and usually localized in the right iliac fossa. In typical cases, the pain should continue for some time. In the ordinary run of cases, the pain may be such as not to cause complaint on the part of the patient; it may be entirely on the left side, in the groin, along the penis, referred to the end of the penis, in the testicle, in the epigastrium or in any other part of the abdomen. Pain may be entirely absent, or the pain complained of may be nothing more severe than a slight exacerbation of that experienced by the patient during the entire course of the disease.

¹A. D. Whiting, M. D., Phila. Annals of Surg., May, 1910.

Vomiting may be a symptom of perforation, or may be the cause of it. Murphy of Chicago has stated that it is constantly associated with the perforative peritonitis of typhoid. This symptom was entirely absent in a large number of the cases in the German Hospital series.

A fall of temperature may immediately follow the perforation. It was not noted in the German Hospital cases, possibly because the temperature was not taken always at the time of perforation, but later when beginning peritonitis caused a rise rather than a fall.

Collapse and sweating are supposed to be found in connection with the fall of temperature. These are found in a fair percentage of cases, but are not present in the majority of them.

Tenderness and rigidity generally follow perforation. The former is of less value than the latter because a great many typhoid patients have abdominal tenderness throughout the entire course of the fever. Rigidity becomes more marked with spreading peritonitis, as a rule. It must be remembered in this connection that rigidity can be elicited in any case of typhoid fever, whether perforative peritonitis be present or not, by unskilled, rough palpation. The rigidity to be distinguished is that due to reflex activity of the muscles consequent upon beginning peritonitis, obtained by the skilful touch of the artist.

As a general rule, the pulse rate increases very markedly after perforation, running as high as 140 to 160 and becoming weak and thready. In some cases no change in the pulse rate will be noted.

A change in facial expression, which Harte and Ashhurst describe as a general weakening of the expression, may be noted at the time of perforation. By the time the attention of the physician in charge has been called to the occurrence of the mishap, this cast of countenance will generally be lost, being replaced by the former expression or that more typical of general involvement of the peritoneum. In a patient profoundly toxic, no change in expression may be noted.

It was thought, at one time, that a positive diagnosis of perforation in typhoid could be based upon an increasing leucocytosis. Unfortunately, even that sign may

be claimed by only a part of the cases, it being almost as variable as most of the other signs and symptoms advanced. One or two counts would be of practically no value under any conditions, unless the normal leucocyte count of that particular case had been noted before perforation, as investigation has shown that leucopenia is not constantly associated with typhoid fever.

The two signs of perforation mentioned by Brown, namely, a "dipping crackle" elicited by a dipping palpation with the stethoscope; and the extension of tenderness in a given direction by posture of the patient, were not applied in any of the patients in this series. Whether they would be of material advantage in arriving at a correct diagnosis or not is questionable.

Etiology of Whooping-cough.¹—Kilmenko concludes as follows: First, that the Bordet-Gengou bacillus is without doubt the exciter of whooping-cough; second, that one may experimentally produce whooping-cough in young dogs and monkeys, and probably also in other animals by the injection of pure cultures of this organism; third, that he could culturally demonstrate the bacillus in all fresh cases and in the old cases found the organisms in the expectorated material. A minute description of the morphology and cultural characteristics is given. His experiments upon guinea pigs, rabbits, mice, lambs and little pigs were practically without results; on the other hand, he often succeeded in infecting monkeys by the inoculation of pure cultures of this bacillus, producing an infectious catarrh of the respiratory tract, this being often spontaneously carried over to other animals. The same results followed experiments upon young dogs, but older animals showed much greater resistance with correspondingly negative results. The clinical symptoms of the experimentally produced infections showed striking resemblance (including the wheezy cough) to those symptoms present in spontaneous whooping-cough of man.

¹C. Kilmenko. Centralbl. f. Bakt. u. Parasit., Jan., 1910.

TREATMENT.

The Treatment of Insomnia.¹—Drugs in the treatment of insomnia are to be employed with the greatest circumspection. Perhaps no other phase of practice is fraught with greater responsibility than the treatment of sleeplessness. When it occurs as a minor disorder, that is to say as an occasional result of some known violation of the laws of health, no account need be taken of it. We all suffer at times from that kind of insomnia. Excessive fatigue and eating just before retiring are common causes of minor insomnia. However, there is also a simple insomnia due to a wholly empty stomach and needing only a little hot milk to set things right. Flatulence or an overloaded colon may prevent sleep. The effects of tea, coffee and tobacco are familiar to all, though it is less often recognized that strychnine, caffeine and theobromine when given medicinally often cause insomnia. Mental excitement is of course a dispeller of sleep. The high arterial tension of Bright's, arterio-sclerosis and certain digestive disturbances are often the cause of persistent insomnia. Sleeplessness in old age is due to rigid vessels in the brain. On the other hand there is the insomnia of vascular debility, as in anemia, convalescence from grippe and typhoid, and in Graves' disease. Here the trouble is feeble vaso-constrictor action, a kind of vascular paresis. These patients often fall asleep readily enough sitting up, but when they lie down such is the automatic dilatation of the cerebral vessels that the brain is suffused with blood and sleep effectually prevented.

Each case must be studied on its merits. It goes without saying that soporifics are not to be given indiscriminately. Look for, and correct underlying causes. Drugs are to be regarded only as expedients, when they are used, while the cause is being sought out.

Major insomnia is a somewhat different matter. That ushering in or accompanying acute insanity or that associated with severe organic disease must be combated with powerful drugs, such as morphine, hyoscine, chloral, and, at times, even chloroform. Again, it may be necessary in the

early stages of pneumonia, pleuritis or pericarditis to give morphine hypodermically to relieve insomnia, delirium, restlessness, pain or cough. Avoid its use in the presence of cyanosis. In the sleeplessness and restlessness of cardiac disease it may become necessary to employ morphine.

Whenever it is necessary to use soporifics in the treatment of neuroses and simple mental restlessness or excitement the bromides are of course to be first thought of. Simple measures, however, are to be exhausted first—such as warm baths, hot drinks before retiring, etc. In selected cases chloral may be combined with the bromide.

Somebody has said that no one ever suffers from insomnia who has to get up at six o'clock every morning. Of course this is too much of a witty generalization, but there's a lot of truth in it, just the same.

In insomnia due to neuralgic pain antipyrin in five grain doses will induce sleep. In certain cases of neurasthenia one may have to give sulphonal in twenty grain doses, in very hot water. Sulphonal and potassium bromide together act particularly well.

Veronal is a good general hypnotic; dose 7 grains.

Use codeine as a substitute for morphine whenever possible. In sleeplessness due to cough employ heroin.

Paraldehyde is safe to use in grave cardiac and renal insomnias when it becomes necessary to use hypnotics. It has a tendency to induce diuresis, too, an advantage under such circumstances. It also possesses a certain advantage in the insomnia of asthma and arterio-sclerosis, namely, it tends to diminish spasm.

In imaginary insomnias the use of placebos is justifiable and often markedly effective.

NIGHT SWEATS IN PHTHISIS.—Noble P. Barnes, says the *Critic and Guide*, recommends the following combination in the control of night sweats in consumption:

Atropine sulf.	gr. 1-120
Agaracin.	gr. j
Picrotoxin.	gr. 1-6

To make one pill. Sig.—One or two pills on retiring.

¹Therapeutic Medicine, April, 1910.

American Medicine

H. EDWIN LEWIS, M. D., *Managing Editor.*

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The use of colored underclothing in summer, particularly in our more southerly States, would seem to be justified. When it was first suggested that skins were pigmented to exclude too much light, the profession was quite skeptical, physicians preferring to consider nature a fool to create colored races in light countries. The light theory was utterly rejected by Americans but has since been accepted by the French and British, who are now taking steps in the tropics to give themselves the same protection by colored underclothing that nature gives to the natives by colored skins—another of the innumerable instances where an American idea must go to Europe for acceptance. Now that the subject is considered settled abroad, we are tardily taking it up. In an article in the *Medical Press* of June 2, 1909, Doctors Phalen and Nichols describe the experiments now being made to find out whether it will do any good to protect our soldiers from tropical light by opaque underclothing, and they make the astounding assertion that they are personally in "the strictly agnostic mood." So there are still some who think that the pigment of the Filipinos is merely a useless freak of silly nature. This is depressing yet it shows the proverbial difficulty with which a new idea attains recognition. It is also surprising that soldiers must wait so long to profit by

scientific advances, for it is now fifteen years since the facts were first published. We must wake up or we will lose our reputation for progressiveness, and keen recognition of new useful discoveries. We might even be accused of interfering with the health of troops if agnosticism is to be a recognized policy.

Opaque clothing is becoming popularized and it is interesting to note that the instinctive demand for it, not only in the tropics but in America also, is so great that manufacturers are flooding the market with enormous quantities of black undergarments. Lay experience already shows it to be comfortable and beneficial. It is of course wholly unnecessary in such cloudy places as northern Europe nor do the swarthy Italians need it, but blond migrant types must use it when residing in light countries where the native is pigmented. It is considered well worth a trial in this latitude for it has been known to prevent those nervous conditions so common in the light season. That is, it begins to look as though the lay public will lead and the medical profession follow. It might be well to direct attention to the need of better head covering if one is exposed to the sun. All tropical natives use elaborate head dresses for this purpose, and it is noticed that our own outdoor workmen have an instinctive desire for black felt hats. Agricultural la-

borers in our south, and Mexicans also, use opaque hats to a large extent, and prefer those with wide brims. The dinky little straw hats with narrow brims affected by city dwellers, afford no protection at all in the sun, and may be the cause of much suffering as well as actual sickness if the wearers do not remain constantly in the shade. There is need of a great deal more knowledge of summer hygiene in order to combat the fashions of our cities which are much nearer the tropics than we realize.

The three forms of sunstroke are very much misunderstood by physicians, even in the tropics, and curative means are often misapplied. The form with high fever and more or less profound coma is now known to be due to heat alone and should be called "heat stroke" or "thermic fever" for it often occurs in hot fire rooms or at night. Moreover negroes suffer from it unduly if they are exposed to a high degree of external heat which their black skins absorb so easily. In their natural state, they are rarely if ever exposed to temperatures over 95 or 100° and in a fire room of 150° temperature they suffer more than white men. The second form of "heat cramps" now worrying the naval surgeons, seems to be solely due to withdrawal of body fluids by excessive perspiration which has not been replaced by frequent drinking of copious draughts of water. It is often miraculously cured by intravenous injections of saline solutions or by high enemata if the patient is not too far gone to absorb through his mucous membranes. The third form of collapse with little or no rise of temperature or loss of consciousness and which is generally labeled "heat exhaustion" is gradually being recognized by tropical ex-

perts as due to the effects of light. It is often seen in places and seasons when heat stroke does not occur. Its prevention is merely a matter of avoiding exposure to excessive light, irrespective of what is done to avoid overheating. The puzzling cases are those with a mixture of all three conditions, for sunstrokes are of every conceivable grade between these three forms, if the patient has been exposed to both heat and light and has suffered from excessive perspiration without the use of plenty of drinking water.

The prevention of all forms of heat and light stroke is so simple and rational that it is more than amazing to find wrong advice given by those who should have kept up with the investigations of the last few years. A recent text book actually advises abstinence from drinking water in conditions of great heat when everyone knows that it must be taken to replace perspiration whose evaporation carries off surplus heat. Abstinence also prevents proper elimination through the kidneys, brings on numerous symptoms of toxemia, and the highly concentrated urine has been known to cause inflammations of the whole urinary tract. As soon as perspiration is checked by increased specific gravity of the blood, the body temperature at once rises to a dangerous point. Then there are the sunshine cranks who advise people to expose the naked body to the midday summer sun, and who do not seem to realize that they are thus causing more or less prostration. It is high time that Americans learn these lessons and prevent the cases which are so numerous every summer in and out of the cities. If cool shady places cannot be found and one must expose himself to heat and light, let him avoid undue exer-

tion if he can, provide himself with opaque clothing for its shade, and drink sufficient water to keep up a copious perspiration and free flow of urine.

The continuance of high infant mortality is the painful news given out by Dr. Stowell of the New York City Children's Hospital and Schools in the *Medical Record* of May 22, 1909. He shows by careful statistics collected from both Europe and America, that, instead of the greatly lessened death rate we have all along believed to be the rule, there is really very little if any improvement on the whole. To be sure, here and there, we find a reduction, but at other places an increase in the last twenty-five years. It seems that life saving is really being confined to the more intelligent classes; as it always has been while the stupid are still permitting their babes to survive or perish according as luck or extraordinary vitality decides for them. All this, though depressing in the extreme, is the natural course of events and has always been so.

Survival of the lower classes is possible only by reason of a large birth rate, while the intelligent may actually increase more though their birth rate is a mere fraction of that in the slums. It really seems that the raising of feeble offspring is as far beyond the ability of a low grade civilized woman as it is beyond that of a savage or a cow. Survival of the strongest as the fittest is still a process of nature, persisting because of sheer inability to learn how to save the weak. It seems the height of brutality to suggest that in the long run, the elimination of the weak is good for the race, but is it really desirable to have them survive? We of course will do all we can to make them

survive, but our failure so far need not cause us to grieve unduly.

Saving the least desirable may be misdirecting our energies, for if we spend the time and money in teaching the better types how to raise their babies, our advice will be understood and heeded and we will save more, and better ones, than if we attempt the impossible task of saving the low grade ones whose mothers have not the brain to comprehend and who let their babies die in spite of our efforts. The race survives over all adversities and though certain types do disappear, the processes of nature have sufficed fairly well so far, and we need not anticipate future failures. Indeed there are innumerable higher and better types than in ancient times and we may safely predict a still further improvement by the old wasteful methods which we cannot stop. The high death rate of the least desirable is therefore a cloud with a silver lining after all.

The increased work of vacation seasons is deserving of some thought on the part of employers. It has long been known that we can get more work out of our subordinates if we let them take off the harness every now and then and get out to pasture, and as there is usually a slack season in every business, that time is chosen for vacations with full pay. Luckily the hot season is the slack one as a rule, but there are exceptions and in such callings a custom has grown up of compelling the stay-at-homes to do the extra work of those on vacation. Of course there is no generosity in that but what is of more practical importance is the fact that throughout the whole vacation period the lessened personnel is overworked and its product deteriorated; moreover they

are overburdened at the very time they should have less work. Such employers should understand that it is folly to act this way, and that if they desire to make more money they should increase the force in vacation time—at least hire a temporary hand for each man away.

Compulsory vaccination of public school pupils is declared unconstitutional in California, according to a decision of the Superior Court of Santa Cruz county, because the law exempts private schools and is therefore class legislation in favor of the rich who may take this means to escape vaccination. Superficially the action seems well taken from the standpoint of public policy, if not of public health, for if there is anything American jurists must guard with jealous vigilance, it is the matter of making the laws apply equally to all, yet we must confess that there are exemptions from every law and the vast machinery of our courts is designed for the very purpose of determining whether or not the defendant is exempt. In this case the court decides that the law positively discriminates against the poor who are compelled to send their children to public schools. As a matter of fact the ruling is most undemocratic, in that it violates the rights of the other poor men who do not wish their children forced into the danger of close contact with the unvaccinated. We hope these men have power to elect a judge who will hold that no one has the right to injure others.

The danger from the unvaccinated is not so enormous that we need worry over this temporary set-back to public health—indeed there are many sanitarians who will look upon it as a blessing in disguise,

for it gives them the opportunity to tell the parents that if they will be sure to vaccinate their children properly, smallpox cannot be contracted. Yet no one wants to run the slightest risk and we hope to see the day when all children are vaccinated in both private and public schools though this desirable end is far off. If a man objects to vaccination the only ones he jeopardizes are his own children, and if they are to inherit his illogical brain, perhaps it is just as well for humanity that they should die, brutal as that thought is. The decision is really helping to kill off those unfit for modern life—those who ignore the rights of others. If we are to invoke this callous natural law, in the name of Heaven let the agony be over as soon as possible, let compulsory vaccination end at once and let smallpox do its duty. Then we will have peace, as the pestiferous antivaccinationists will be where they cannot write any more pamphlets full of plausibilities so convincing to the superficial mind. The point is whether anyone, sane or insane, shall be permitted to kill his children, and we leave the decision to the eugenists. In the meantime, in California at least, people should keep their children away from private schools in which the unvaccinated are received.

The St. Louis Meeting of the American Medical Association was most successful from every standpoint except that of attendance. Last year we spoke of the comparatively small number of medical men who were present at Atlantic City and did not hesitate to say that in our opinion the medical profession were delinquent. This year, with the meeting occurring at St. Louis, a city not only cen-

trally located but offering every attraction as a convention place, an attendance of at least eight thousand was expected. Instead of this figure being approximated, the total registration only reached a little over four thousand! Such an attendance with a total membership of over thirty-four thousand is a sad reflection on the interest and enthusiasm of the individual member. More than this, as we have also said before, it is not a fair way to treat those who have devoted every energy to placing the profession on a properly organized basis. However opposed some may be to certain of the means employed—the “ring-like” methods of those in control having seemed at times perilously near to machine politics—it cannot be denied that the re-organized American Medical Association has been the most important factor in the recent forward march of the profession. It is entirely probable that gentler methods would have availed the same result, that a little less tendency to consider every bit of criticism or difference of opinion as pernicious antagonism or subsidized interest would have evidenced a broader, kindlier spirit. But that is neither here nor there. Great good has been accomplished and not only every honest physician but every man, woman and child is going to reap the benefit. Every physician, therefore, who is in sympathy with the work of the Association for the betterment of mankind owes it to himself, his fellow workers and his profession to be more than a passive, or indifferent member. In other words, he should strain every effort to attend the annual meetings and by his presence if in no other way, demonstrate his interest and personal influence. Circumstances occasionally force a general practitioner to stay at home. We

are not referring to such men. Their number is small and if they are obliged to miss a meeting one year the same misfortune rarely occurs the next. It is the physician who stays at home because he does not care who hurts and handicaps the cause, and it is such men who are recreant to their duties and responsibilities in the onward march of their profession. Unfortunately they are in the great majority, or the aims and objects of those who have blazed the way would have been achieved long ago.

A few needed changes were looked for this year, for a great many physicians have felt that those in power would recognize the justice of the demand that the rank and file of the members in attendance at each meeting be given a larger voice in determining and directing the policies of the Association. Likewise, there are not a few who believe that the president of the Association should be more than a mere figure head. The office should be broadened and carry with it a veto of questions of policy or the expenditure of Association funds. This would dignify the office and go far to remove the accusation that the Association is managed and controlled by two or three Chicago men. In the beginning it was doubtless necessary for a few to go ahead and forcefully carry out the measures needed to place the Association on a solid foundation. Now that this has been done, and the organization has grown to proportions that touch so many interests of humanity, it is time to spread the enormous responsibilities that have been created, and thus give to the great work of the Association the benefit of additional minds and enthusiasm. Plainly, the Association must take such steps to reach its splendid possibilities, or a period

of decadence is sure to follow. We earnestly and sincerely hope that the men who have been big enough and capable enough to accomplish what they have, will be big enough and wise enough to merge

The death of Robert Koch, May 27th, at Baden Baden, where he had gone seeking treatment for what proved a fatal disease of the heart, removes one of the greatest scientific minds the world has ever



ROBERT KOCH.

their personal ambitions and interests in the greater aims and aspirations of the organization that will stand a monument to their endeavors.

known. Although but sixty-seven years old, no life has ever shown a grander array of tangible results, a greater number of scientific problems solved, or a larger

number of important contributions to medical science. It is needless to go into detail concerning the activities of Koch's life. Every student of bacteriology soon learns how richly the investigations of this great German scholar have endowed this all important branch of medicine. Likewise, every clinician must appreciate the labors of Koch in bringing so many diseases from the realm of uncertainty into the light of definite, demonstrable knowledge. To a certain extent Koch's great discovery of the tubercle bacillus may be said to mark the birth of preventive medicine. For generations tuberculosis had been one of the world's great scourges. Medicine was powerless to stay its course for it knew not where, nor to what to direct its efforts at prevention or cure. Then came Koch's report, one of the most remarkable in the whole history of science for accuracy, soundness and absolute incontrovertibility. What had been one of Nature's closest secrets, was now plain as day. No greater triumph of logical scientific investigation will ever be written in the annals of medicine, and as some one has said the honor of having given to mankind the secret of the cause of tuberculosis is greater by far than to have won any or all of the world's greatest battles. From that day the prevention of disease was shown to be the great object of medical science, and preventive methods received an impetus that meant everything to the world at large.

Koch had his trials. The publication of the results of his studies naturally attracted world wide attention. His discoveries were so important that before he knew it, the people were ascribing miraculous power to him, and although he made no hasty or unwarranted claims, he soon became a victim of the people's enthusiasm.

When the reaction set in and innumerable consumptives found that Koch could not cure them, they blamed him, even though he had never claimed that his tuberculin was infallible or absolutely specific. As the years have gone on, however, most of his claims have been substantiated and the belief is growing that the ultimate elaboration of Koch's principles will witness the development of at least an approximate specific for tuberculosis. Professional jealousy, spite, contumely, everything was his lot, but through it all he retained his poise, and fortunately his government recognized his worth. The stress of financial problems, therefore, never interfered with his scientific work and in the face of antagonisms openly expressed by not a few of his confreres, he kept staunchly on his way. Today in reviewing his splendid work, it is apparent beyond all cavil that Koch triumphed in spite of every obstacle. Unlike many another hard worker time is not necessary to prove the value of Koch's labors, for the true worth of much that he accomplished was evident from the first. But as the years go on, men are bound to appreciate more and more the services he has rendered all humanity. Long after kings, presidents, statesmen, politicians and millionaires have passed away and been forgotten except in name, the efforts and work of Koch will go on bearing fruit and multiplying for the good and welfare of mankind. He labored well for the benefit of humanity and no man could ask a grander monument than the actual results he was able to accomplish.

"Keep off the grass" signs have recently been ordered removed from all the parks by the mayor of our metropolitan city. No one will deny the virtue of this

act, and yet, we know of no single instance where the medical profession of any city has ever urged the removal of such signs for reasons of health.

There is everywhere great and commendable agitation against tuberculosis; steps are instigated for the erection of proper dwelling houses in the sections of the poor; lectures are given on hygiene and sanitation, but we have never heard the virtue of the green grass in our public parks extolled by medical men or medical journals. All the talk being air and sunshine—and the grass was there; viewed from a *dust-laden* distance.

Green grass has many beneficial qualities. It is restful to the eye; it purifies and moistens the air making breathing much more pleasant and healthful; it has a tendency to encourage deeper breathing and no one will deny that it somehow has an exhilarating influence upon mankind. It is cool in the summer heat and we feel the desire to walk or lie on it. Most people think of it as a thing of beauty to look at and our sociologists urge it as a good playground for children. Why only children? The great army of ambulant sick and convalescent need it much more! The freedom of the park grass in cities and towns all over the country would soon improve health conditions and lower the death rate considerably. That at least is our opinion.

The anti-opium crusade in the orient is not progressing as well as was hoped. Very doleful tales come out of China as to the apathy of the officials, but what else can be expected when opium users are in every class of society? We might as well expect enforcement of a law in the United States forbidding the use of alcoholic beverages. The worst of the matter is

the discovery that the difficulty of getting opium to smoke is creating a class of opium eaters and morphine fiends, the same phenomenon as the resort to vile whiskey where milder drinks are forbidden. In other words races and classes must reform themselves. Racial habits cannot be changed in a day and it is folly for Europeans to expect to change Chinamen into white men. Moreover where restrictions have been tried, there has been an appalling increase of smuggling as was freely predicted and it will continue. The oriental is learning to hate occidental laws as something to be evaded, whereas the peace of the world is dependent upon voluntary acceptance of higher civilization gradually. It cannot be crammed down their throats quicker than it can be digested.

The anti-opium crusade has been too precipitous and we must go back and begin over again or the last state will be many times worse than the first. The mistake was due to the hysterical exaggerations of the harm being done, mostly based upon well meaning reports of missionaries, who of course will not compromise with their consciences and will insist upon prohibition which cannot possibly prohibit. Careful scientific observers in the orient have repeatedly shown that the harm done is not anywhere near as great as the unscientific clergymen have imagined, and have shown that to a certain extent opium bears the same relation to these stolid nervous systems that coffee does to even more unstable organisms. There is even more than a hint that the moderate use of opium may fill some need which the Chinaman will satisfy by hook or by crook. Of course there are too many cases of abuse as there are too many cases of coffee intoxication or tobacco hearts, but it is absurd to force prohibition because some go to

extremes. It is as foolish to forbid possession of money because some hundreds kill themselves with too much. The whole hysterical business had better be allowed to quiet down awhile.

The superiority of female students, both children and adults, has been mentioned and explained hundreds of times and yet the full pedagogic significance of the fact still seems to be ignored. The girls in many a co-educational college furnish an overwhelming percentage of the best students and yet in later years the men take the lead in every one of the lines in which as boys they were so backward. It is all due to the well known fact that in her weaker physical state, self-protection has demanded an early development of the perceptive faculties. Age for age, girls perceive understandingly what boys scarcely notice. The differences between the two sexes are so great that it is unscientific to class them together and there is a growing suspicion that each is injured by current co-educational methods—the boys unduly stimulated and the girls retarded. In spite of this self-evident conclusion, pedagogs seem bent upon the impossible task of making the boys keep up with the girls—a plan sure to be followed by far-reaching bad results. The boys are liable to become discouraged while the girls are led to embark upon careers as wage earners in professions in which failure is inevitable.

Making history and learning it are two vastly different things requiring mental qualities of diametrically opposite character. The slowly developing boy is destined now as in the past, to be the history maker, while the girl is to learn of these deeds at the fireside. Indeed some of the world's greatest innovators have been notorious for their inability to learn of the innovations of others, while the exceptional

scholar and brilliant teacher may never have an original idea in his life. Although good students as a rule furnish most of the great men of college training, there is an appalling number of life failures among the best students. That is, ability of the immature to learn is no criterion of future ability to do things, and there is absolutely no way of determining who are to be the successes. For these reasons there has arisen a great discontent with our present pedagogic methods which shower honors on women and boys who are not the best equipped for the life struggle. It is thought that the college reward should somehow fall to those who are to become successful, though no one can pick them out, and that more attention should be given to other faculties than mere mental quickness and ability to remember trivialities which grown men try to forget. At present let it be widely known that our methods give distinction only to those who are the best learners and not necessarily to those who will be the best workers. The superiority of women students may thus lead to a change of method whereby the slower male mental qualities will be better trained for the work of life.

The fate of the students who fail to get diplomas is now being given considerable attention with the alleged result that they are found to be doing very well, some being prominent leaders in numerous lines of work. It is even said that relatively they are doing better than their classmates who succeeded, that is, a higher percentage attain success and distinction as workers and originators. This, if true, should not surprise us. The good student drifts into teaching or writing of the deeds of others, while the others do deeds of their own—the former become conservatives resentful of innovation, the latter innovators resentful of the restraints of authority. Progress is the resultant of these

two forces, each of which is essential, the one as a balance wheel, the other furnishes the motive power. If one is too strong civilization does not advance, if the other prevails there is instability from adoption of untried theories. It is best that the revolutionists should be rejected rather than have their originality crushed out of them by too much study of the old. Their forte is to devise the new and to be dissatisfied with the old. Gladstone, to be sure, was a star student, but the vast majority of honor men remain students all their lives, while college failures like Darwin and Napoleon remake the world. Consequently we need not be worried over the boys who do not get through college, but we must give them a chance to work out their own salvation.

Unsatisfactory medical students might also be given a chance, as it is a notorious fact that some of the shining lights among the workers of the profession were far from shining as students. Of course a man cannot be given a chance to practice until he shows that he knows how, and those who fail to get a diploma cannot get the opportunity to work. All must be good enough students to learn the how of present methods even if they are dissatisfied with them. But the point for our medical faculties to ponder upon is whether they are not placing too high a value on mere ability to learn a lot of stuff which must soon be forgotten and neglecting the men who have tremendous abilities for work—the future leaders. Are the graduates of the modern extensive courses of study succeeding any better as practitioners or innovators than those who were not stuffed so full as to have mental indigestion? There is such a thing as being unable to see the woods for the trees. Let us go slow in any further lengthening of the curriculum and give more attention to those who are evidently men of great ability but unable to absorb

all the food laid out for them. This may seem like heresy to our medical teachers but they ought to think over these new and astounding revelations of the success of non-graduates of other colleges. A fresh undertrained man makes a better race than the stale one. Extremes are always dangerous, and that of too much study may not be as bad as too little, but it is bad all the same. Medical education must be uplifted but it must not carry us off our feet. Let us take stock of our present courses and think a bit.

Simple continued fever, though destined to disappear from nosological tables, must be tolerated for an indefinite time but with the distinctly new meaning of an unknown infection not malaria, typhoid or any other recognizable disease. It is not to be used as a cloak for faulty diagnosis, but for all infections not yet worked out, as it is reasonable to assume that there are scores of ordinarily harmless organisms which take on pathogenic powers when the defenses are temporarily weakened. Perhaps, indeed, bacteria which we always harbor may be found to be the culprits. It is a hopeful sign of the times, that every little while some investigator finds the cause in a case which would ordinarily have been placed into the column of simple fever. Lieut. T. W. Spencer, R. A. M. C., reports such a case in the *Journal of the Royal Army Med. Corps* of Aug. 1909, in which the blood furnished pure cultures of a short non-motile bacillus not allied to any well known pathogenic organism. Unfortunately only a few practitioners have facilities for making a laboratory diagnosis, but as most of the cases are short, mild and self-limited, ignorance of the cause is not a serious matter. Still, the art of diagnosis should be so exact that we can find the cause of every illness—the goal toward which we are steadily moving.

ORIGINAL ARTICLES.

LATER NOTES ON PHYSICAL EXPLORATION AND TREATMENT OF HEART DISEASE WITH A FINAL WORD ABOUT OPERATIONS AND HEART FAILURE.¹

BY

BEVERLEY ROBINSON, M. D.,
New York City.

To anyone who is ignorant or thoughtless, some present-day methods of managing sufferers from cardiac disturbances would seem to be a great and desirable advance over previous well tried practice. But is it so? I fail to be convinced, and shall give a few clinical observations of my later years to justify my affirmation.

It is not very long since the sphygmograph in some form, and more or less improved as years passed, was the accepted and time honored means of examining the

pulse in a scientific manner, so-called. Plain tactile sensations of the older, experienced physician were not deemed sufficient accurately to determine facts pertaining to rhythm, force, intermittence, irregularity of pulse beats. It was essential, as was stated, to have definite, well registered tracings that the eye could see and the brain interpret and compare. Singular to say, despite much long continued and various work on the part even of skilled observers, the sphygmograph has, to a large extent, disappeared from practice, private or hospital.¹ In its place, we now have the sphygmomanometer, and in connection therewith we have already the careful, selected and admirable work of many men in our profession whose enthusiasm and talent make us proud, and justly so, of those who follow the older ones.

But shall this new and improved instrument, which speaks to us by the rise and fall of the column of mercury, or alcohol,

¹Note: It has been urged against this paper that it was not educational and further, that it did not show modern instruments for physical exploration in their true light, i. e., as helps to older and usual methods, but as though intended to displace them.

To both these objections I protest.

First, I contend it is not truly educational to exaggerate the value of methods simply because new and without due consideration of objections which trial has revealed repeatedly.

Again, I contend that today, we are clearly in need of those, who while in no way backward to learn and profit by newer methods, desire to establish their just value and not permit them without questioning, to supplant, or belittle in any degree, what still is, and will remain, far more essential in the majority of instances.

Particularly, I wish to be understood in regard to my appreciation of the advantages of the sphygmomanometer in diseases of the heart and because it is now in frequent use, both in hospitals and private practice. At first, considered very simple of application and the results obtained by its means reliable practically to guide or help us in diagnosis and definite lines of treatment. At present, this is happily still true, but it is known the instrument may be misleading, unless its findings are interpreted

accurately with respect of modifying conditions—personal and ambient.

In an able interview recently published of Dr. James Mackenzie's great work on "Diseases of the Heart," I find the following with which I wholly agree:

"The sphygmometer, which has been so much the fashion, he believes to be much overrated. The trained finger is as yet the best guide we have in determining the pressure within an artery * * * * * a thorough appreciation of the patient's own experiences is often of more value in correctly estimating the heart's efficiency than the most elaborate methods of physical examination."¹

With the foregoing explanation, I offer my paper and I claim for it some importance, because no one has considered the subject fully in quite the same way.

¹The newest and most practical hospital polygraph (including sphygmograph) with which I am familiar, is that of Barringer. It is described and pictured in the November No., 1909, of the *American Journal of Medical Sciences*, page 727. After reading the description, even without seeing the instrument manipulated, one must conclude that to be really useful requires much skill and habit.

¹N. Y. Medical Journal, June 11, 1910, p. 1264.

and seems to tell the intellectual, as well as the physical eye, the strength and force of the heart beats through the rise and fall of blood pressure, endure for any great length of time? I scarcely think so, judging by the past and judging by what is revealed to me with the use of this instrument as with its predecessor—at one time equally vaunted and followed.

No mere mechanical contrivance can possibly register accurately vital force, or translate it to us in a thoroughly reliable and authoritative way. This force varies too much, too continuously with every different person of whatever age, sex or occupation. It varies also with every passing emotion and almost every accidental condition of place or surroundings, and, of course, with the influence and effect thus occasioned.

It should be admitted equally that the instrument to be at all trustworthy must be manipulated by one who has experience and intelligence and almost daily habit in its use. Again, even the observations of such a one are relative in the main, and comparable only in a truly serviceable way when made in regard to the same individual and under essentially the same conditions of life and occupation.

Change of diet, change of work, mental or bodily, change of instrument and technique, such as we should have with change of expert observers, will modify or alter considerably the reported record and especially in variable, inconstant cases in which closest observations and best interpretation thereof are alone valuable.

In this connection Leonard Hill¹ writes that "blood pressure reading should be taken under uniform conditions, with pa-

tients lying horizontally, not emotionally excited, not after exercise, not after taking hot food, tea, coffee, or alcohol, and not after the hand or wrist has been warmed or chilled. The pressure should not be read when it is first raised, but after it has oscillated up and down several times, since this gives a more accurate index, especially in the leg arteries. The reappearance of the pulse gives the pressure more exactly than the disappearance."

The preceding quotation proves that even the sphygmomanometer, which is frequently claimed to be so simple and practical as to require relatively little time or care in its use, to obtain reliable data, must *now* be judged differently with more perfect knowledge.

This, and much that might be added, are only again confirmation of the important fact, oftentimes repeated and yet never old and time-worn really, that the art and science of medicine must ever remain widely apart in many particulars. If the body were a mere mass of organs whose size, weight, appearance, structure, could settle definitely and invariably their functional power and activity, then mechanical apparatus and purely physical methods would be everything we should desire, but such is far from being the case, as we know.

And thus it is we are forcibly obliged to return to the things and to the knowledge of very ancient date and treat them with increased and well merited respect. Consideration for old time methods must still come to the fore, and the erudite touch combined with the translation which comes through inward appreciation and feeling—the final outcome of life-long work and observation—is after all our most valuable asset.

¹*Am. Jour. Med. Sciences*, Nov., 1909, p. 753.

To the foregoing should be added a few words about the X-ray as an aid to diagnosis in diseases of the heart. In many instances already, it has proved very valuable, and each day, in accuracy and perfection, it is advancing notably. On the other hand, as shown by L. F. Barker¹ certain errors are to be avoided in its use which only great skill and practice can surely overcome.

"By means of diagrams Barker describes the various shadows which the heart may give under different conditions and from different directions."

Skiagraphy is therefore to be prized much more by the advanced worker in hospital wards, than by the practitioner in his daily routine of private work, and even in wards "errors to be avoided in the use of the X-ray" are not easily mastered. While useful as an aid to a well thought out diagnosis, it (the X-ray picture), is distinctly subordinate to our regular procedures as they have been marked out for us by the master minds of our profession.²

Let us now for a moment consider percussion and the orthodiagraph. Hitherto percussion of the heart, as of other organs, has seemed to be our most accurate way of determining its size, configuration, situation. With the new instrument shall we soon abandon percussion, or look upon it as second best? I do not think so, and for one or more of the reasons already given in speaking of the sphymomanometer.

Further in this connection I would cite Drs. Clayton and Merrill, who write:

¹*Bulletin of the John Hopkins Hospital*, October, 1909; also, *Boston Med. & Surg. Journal*, Nov. 25, 1909.; pp. 795 and 801.

²C. L. Minor, *N. Y. Medical Journal*, March 19, 1910, p. 578.

"Satisfactory use of this instrument, as is the case with many others, such as the microscope or stethoscope, necessitates practice and a thorough familiarity with the normal." * * * * *

"The skiagram usually requires long experience to interpret correctly" * * * and "as a rule, percussion may be depended upon for clinical purposes." * * * yet "in some subjects it was absolutely impossible to outline the heart by percussion." * * * * * and alterations in the shape of the organ (heart) are determined more accurately by means of the orthodiagraph."¹

Personally, it is true I have had no experience with the practical use of the orthodiagraph. Thanks, however, to the great courtesy of Dr. I. Adler of New York City, I was able to see the working of the instrument at his house on the evening of January 12th, 1910.

In a letter to me, from Dr. Adler, Nov. 9th, 1909, he writes as follows: "I am using the orthodiascope, (also called orthodiagraph) more than ever and grow more enthusiastic about it every day. It is of immense value to me, not only in corroborating and confirming the results obtained by auscultation and percussion and allowing of more or less exact measurement where formerly we had only guesswork, but above all on account of its opening up entirely new points of view in diagnosis. * * * I will frankly say that I would not like to do clinical work without the orthodiascope."

To this I would add, having witnessed a practical demonstration of the instrument at Dr. Adler's house, with Dr. Adler, Dr. V. H. Norrie, Dr. Walter Mendelson and Dr. Adler's able associate

¹*Am Jour. Med. Sci.*, Oct., 1909, pp. 549-562.

present, that while I cannot admire too much the knowledge and skill of Dr. Adler and his associate, I am of the opinion that the orthodiascope must be limited in its use except in a relatively few instances, to hospitals, with able and trained assistants. Otherwise I do not believe the orthodiascope will have even later, *real* value in clinical medicine and in our efforts to cure disease. It should be seen and understood by all; it should be, or rather will be, utilized by a very select few.

The electro-cardiogram is the most recent addition to our knowledge relating to physical exploration of diseases of the heart, but here even more than with the cardiogram, (taken by means of the orthodiagraph) and sphygmogram, the instruments employed are costly, cumbersome, complicated, and require for their intelligent use specially skilled and expert assistants.¹ When we come to the use of medicinal remedies, what do we find? Frequently the so-called scientific observations taken by physiologists, first of all, in their experiments upon healthy animals, which differ very much and in very many ways from man. After the physiologists are through with their investigations, it is then the hospital, the laboratory, or the dead house which gives us another working basis of observations and results.

Finally, however, it must be the careful and intelligent art of the wise, sympathetic, experienced physician who outside

hospital wards attends to patient day in and day out, not to speak of the night watches, and who finds out really what are his most reliable drugs, when and how to use them to best advantage, what their indications are, and what their drawbacks.

It is a favorite notion of the moment that with heightened blood pressure, digitalis should not be used. Knowing its effect upon the peripheral arteries, this seems reasonable, and in many instances, it is wisdom to be followed. But there are exceptions and I have in memory many a case in which digitalis has been serviceable and despite the contraindication of hypertension and increased blood pressure. It was simply because blood pressure was a permanent factor, so to speak, and the first and primary indication for treatment was to increase cardiac power, which was done effectively with digitalis.

There are times, of course, when the untoward effect of digitalis on the peripheral arteries is only well neutralized by some vascular dilator taken with it—notably by nitroglycerine, or the nitrites.¹ Unfortunately, it is frequently difficult to know just when and how much nitroglycerine or the nitrites, to give as their action is relatively rapid and evanescent as compared with that of digitalis, which is eliminated slowly from the economy. But in instances where arterial changes are permanent and considerable, as is often true past middle life, or sooner in alcoholic or syphilitic patients, nitroglycerine, or the nitrites, even in large doses and continued for some time, have little or no appreciable effect, bad or good.

¹Diseases of the Heart, by James Mackenzie, 2nd ed. p. 370; also *Le Telecardiogramme*, by W. Enthoven, *Arch. Internat. de Physiologie*, 4, 1906-07, p. 132. Thanks to the courtesy of Dr. Walter B. James, of New York City, I have had the privilege of seeing his demonstration of the use of the instrument in latest improved form.

¹According to Hare, atropine is the most useful drug to overcome vascular relaxation without directly stimulating the heart muscle to increased endeavor. *The Therapeutic Gazette*, Oct. 15, 1909, p. 689.

In some cases also, as Hare¹ very wisely writes: "We must endeavor not to bring pressure to the normal, but recognize that while the arterial pressure is too high, and must be lowered, it is nevertheless essential to bear in mind that a tension higher than normal is essential if the blood is to be driven through rigid and narrow blood-paths." I beg to add that in reasonable doubt it is wiser and safer not to attempt to lower pressure, but regard it as evidence of a natural and conservative process, and especially is this true whenever the patient is free from unpleasant subjective symptoms.

After all is said, we are obliged to return to old time knowledge. When digitalis causes much slowness or irregularity of pulse, when in addition there is nausea and pallor, and no favorable reaction noticed in any way, we shall act most wisely in stopping it altogether for a while, or in giving it in small doses and it might be, at longer intervals.

The form of giving digitalis is not unimportant. To obtain its most powerful effect the fresh infusion from good English leaves is usually the best; when nausea is marked, or the stomach intolerant and we feel we must try it, no preparation equals the tablet triturate, the best homoeopathic ones appearing to me the most reliable for cause. They are made from tinctures prepared with the fresh plant and most carefully compounded.

In a few cardiac cases, crystalized digitalis is most effective. And occasionally when every other combination of digitalis fails, Trousseau's diuretic wine is a very

saving help in time of greatest need.¹

Now much of all the foregoing is the result of experience,—empirical, and backed up with no recorded scientific notes or data. It is the outcome of watching and doing during a lifetime; it is invaluable to know, and should not be overthrown, in my judgment, by any researches of even the most careful and judicious among the scientific workers. It is true, and must be admitted,—*precisely why*, there may be many theories,—but which is the wholly true one, time alone shall ultimately decide, and perhaps never.

For many years we have had constant reminders of the great power and efficacy of strychnine as a most valuable and rapid heart stimulant. Occasionally the statement is true, but in many instances incorrect. To some patients strychnine proves of very little, if any, temporary value, and when taken continuously for a time and even in moderate doses, wakefulness, irritability, increased nervousness, are undoubtedly produced, and without any appreciable gain in general strength or vigor.

Both caffein citrate in tablet form and strophanthus in tincture are far superior in the majority of instances. But with the first of these we may get unpleasant effects in some persons and from moderate doses. I have known as little as one grain of caffein cause undue stimulation of the nervous system, and only half the amount could be given at a dose without evident

¹While digalen is said by some to be a good substitute for digitalis, Müller reports that it (digalen) differs but little in its action from other preparations of digitalis and has no marked advantages over them. *Am. Jl. Med. Sciences.*, Nov., 1909, p. 766. Again, E. H. Squibb claims good effects at times from the combined use of digitalis and nux vomica in preference to giving digitalis alone. With both drugs he makes use of the tincture.—*Personal Letter*, Oct. 26, 1909.

¹The *Therapeutic Gazette*, Oct. 15, 1909, p. 688.

injury to the patient of a temporary, but somewhat disquieting nature, since depression seemed to me to follow rapidly after undue exaltation.

A word also, in regard to the other drug. It must be known that we are using the best strophanthus by mouth or hypodermatically, if we may expect from and count upon it as a helpful cardiac stimulant or tonic. This important fact is frequently ignored in practice.

These observations might be readily added to, but I trust they will, even brief as they are, serve the purpose of bringing forth new thought and fresh discussion.

A word may be added usefully on the subject of exercise—of walking. While I approve of walking at the proper time and in almost all forms of heart disease, I insist upon its strict regulation according to the stage of the disease and the strength of the patient. Again, while I have remarked benefit to result from increasing the length and duration of the walk on the level, I am not so sure of its evident utility at times in making ascents, even carefully graded ones. I doubt very much the value of Oertel's theory and practice in this regard, and I have learned rather to dread even short ascents when at all rapid, and I am also convinced that longer ones where the graduation is more even and the ascent less pronounced for a short distance, are to be advised only with extreme care and prudence. The going up stairs, the rapid doing of some act which requires the output suddenly or rapidly, of an undue amount of effort gives a strain to the weak heart which it requires sometimes days and even weeks to recover from.

In older people, and especially after long illness, we cannot be too solicitous and careful in this regard. Heart strain

is then very readily caused and to undo its evil effects is difficult and occasionally very disheartening.

In this category I would particularly direct attention to instances of cardiac irritability, or cardiac neurasthenia, brought on by several factors no doubt, but among them should be especially emphasized, so as to be neutralized or avoided later, the disastrous results of continuous overwork, bodily, or of undue continuous mental effort—or of both combined. Daily routine with many cares and anxieties, and few or no respites, finally breaks down the most vigorous health and the strongest will.

When this has unfortunately occurred, it requires much time, continuous care, appropriate doing and proper medicinal means to re-establish a healthful balance. For a long while undue exertion, emotional excitement or worry, will cause directly inappetence, indigestion, and insomnia.

And the sum of all these will very soon make a very ill patient out of one who seemed to be on the fair road to recovery.

In these latter remarks I am having in view more particularly the nervous disorders of the heart without apparent organic changes. And yet with middle life or advanced years, we cannot be always sure that myocardial changes in subtle, organic form are not present, and are not indeed the essential underlying factors of many disquieting, and for a while otherwise unexplained symptoms of impaired strength and nutrition.

Occasionally in such instances and when all the ordinary cardiac remedies and nerve tonics with change of scene, change of air and prolonged rest had failed to effect a complete cure, the addition of iron and

manganese in a soluble form to a quinine tonic has apparently accomplished the greatly desired result.

Olla podrida if you will, and the rationale of it I deplore, yet the outcome of its taking was the end most hoped for, namely, health, and the basis of its utility some blood defect possibly, although anaemia was not invariably noted by an accurate blood count and differentiation or an estimation of the amount of haemoglobin proportionately.

How often do we read in the daily papers of an operation performed successfully, as stated during the first day or two, perhaps, and yet later bulletins speak of the very precarious condition of the patient. It may be that this unfortunate aftermath is the result of something unforeseen and possibly irremedial. Or it may be while the condition of the patient was considered as carefully as possible prior to the operation and it was determined judiciously that the patient was in good shape to have the operation performed with good hopes of a rapid and complete recovery from it, yet despite the probabilities trouble and danger had suddenly become manifest. Apart from the foregoing instances which we all recognize, and although we deplore we would not change for the while and until knowledge is greater and more accurate, there are other examples of a far different order. Not infrequently operations are undertaken which are not justified simply because there is no need of an operation, or, if there be in a sense need of them they are not permissible to the upright surgeon because the result to the patient, even if successful, is more than questionable as regards ultimate benefit.

Admitted that the patient will almost surely recover from the operation and that the operation itself entails practically very little or no risk to life, yet the ultimate outcome so far as health or usefulness is concerned, would be doubtless, nil. Why then undertake them? Certainly not to gratify personal vanity or ambition, or worse still, to add to the amount of ill-gained lucre.

But there are examples, and we read of them almost daily, where no fault could be found with the skill of the surgeon in a technical way; with his probity and care and good intentions, primarily.

But to say the least, his judgment is faulty and his mental horizon limited, because of lack of instruction in most important by-paths of his work.

And here comes to the front above almost every other consideration, the role of the heart in the economy,—the first of all the organs in the vast number of cases involving life and death. If the heart be weak functionally; if it be unable to bear the strain of a formidable operation and all the necessary calls made upon its power during and immediately subsequent to the operation, in what way can the patient be benefited by any operation?

A heart may be enlarged, have perhaps one or more pronounced organic murmurs and yet be functionally able to withstand even a formidable operation.

On the other hand, given a patient who is evidently much below par,—run down in body and mind, from over-strain in one way or another, and perhaps during many previous weeks or months, and the heart of such a one may give way suddenly and death occur, and despite every known means being used intelligently to ward it

off at the time of the final "heart failure."

Here indeed prevention is highest wisdom and not the so-called cure, and sometimes it means proper management of fever which is present and possibly due to existing toxæmia.

I know of no more difficult, uncertain problem at times in medicine than the correct estimate of what a patient can stand in the way of an operation, simply having the staying power of the heart in view. Here the personal equation is the one important thing and which must be estimated with keenest judgment. And here, too, the wisdom and horse-sense of the experienced, all round practitioner triumphs immeasurably over merely advanced science of the schools backed up with the very latest means of physical exploration.

Moreover, "the failure of circulation may be due to functional causes as much as to a condition represented by appreciable structural change. The teaching of modern science has been too much in the direction that phenomena can be wholly explained by structure. This is not true of the working mechanism of the human organism, nor indeed is it true even of mechanical things."¹

The Coaltar Derivatives.—Dr. Sajous says in *The Monthly Cyclopoedia*: "Summarizing these facts, it seems plain that far from being harmful, in the hands of the profession, the coaltar derivatives have furnished us the only means to avoid the use of the opiates which, notwithstanding the great service they have rendered humanity, have left in their train victims in numbers untold, and the shadows of which hover at once before the modern practitioner's mind when he is called upon to alleviate suffering."

NEOPLASMS OF THE BLADDER.¹

BY

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Neoplasms of the bladder are by no means uncommon. I may say however, that neoplasms of the bladder are not always recognized by the surgeon and many a patient is permitted to go along untreated. Only recently an elderly lady of 83 was admitted to the wards of the Mt. Sinai Hospital suffering from hematuria—her haemoglobin was reduced to 18%, the haematuria having existed for three years, with progressive loss of flesh and strength. She had seen many doctors and yet had been going along year in and year out, no diagnosis being made until she was in an absolutely inoperable condition; inoperable not because of her age but because her intense anaemia absolutely forbade an operative procedure either palliative or for radical cure. So I think we are not doing our full duty toward many of those affected with neoplasms of the bladder; either we are not recognizing the condition, or, having recognized the condition, a great many of us are still of the opinion that the neoplasm of the bladder may as well be left untreated as treated, the results being so uniformly bad.

First, let us briefly consider the pathology and the varieties of vesical neoplasms. There is not very much we can say about etiology so we proceed to the pathological aspects. Almost all varieties of tumor affect the urinary bladder. For purposes of discussion we may consider but two, the

¹Heart Disease and Blood Pressure, Bishop, 3rd ed., 1909, pp. 78 and 79.

¹Read before the Eastern Med. Society, March 11, 1910.

malignant forms or carcinoma and the comparatively benign types or papilloma. Sarcoma occurs but very rarely, fibroma, cysts, echinococcus cysts, etc., all have been recorded but they are so rare that we need give them very little consideration. My remarks are about papillary tumors of the benign type and carcinoma of the malignant

Papillary tumors may be single or multiple. They are of benign character histologically. In clinical manifestations, they have some of the malignant characteristics, i. e., they tend to cause implantation tumors on other portions of the bladder and have a great tendency to recurrence after they are completely removed. As regards recurrence in what we consider benign tumors, we must not forget that pathologists frequently report a growth to be papillary when it is really a carcinomatous papilloma, the carcinomatous changes at the base of the tumor having been overlooked.

Regarding carcinoma, Klebs in 1870, said carcinoma of the bladder was always a secondary growth and therefore should never be treated in the surgical way by removal. He said it was secondary to carcinoma of the rectum, prostate, vagina or uterus. Motz and Monford thought carcinoma of the bladder was frequently primary. Dr. Mandelbaum found that adenoma-carcinoma and fibro-carcinoma were usually secondary to carcinoma of the rectum and uterus whereas squamous and papillary carcinomata are usually primary growths in the bladder. It has been claimed that surgery of malignant disease of the bladder is out of place as most cases recur within a short time. If we remember those conclusions of Dr. Mandelbaum, namely, that adenoma and fibro-carcinomata are usually

secondary tumors and that papillary growths and squamous celled tumors are usually primary, we will have better results from operative interference in malignant disease. Because if the surgeon opens the bladder and on immediate frozen section of the tumor finds that it is adeno- or fibro-carcinoma, he can be sure that removal of the tumor of the bladder will not cure the patient; that there is a primary growth behind it which will invite recurrence and further spread of the disease. If on the other hand, he finds the tumor to be a papillary or squamous celled one, he can do a resection of the bladder with fair hope that if he cuts wide of the disease and removes the glands, the patient will have as good a chance for cure as though he were suffering from a malignant disease elsewhere. So it is necessary to have the pathologist present to give an immediate report on the specimen.

Tumors of the prostate, as Dr. Young of Baltimore, has shown, are carcinomatous in 17% of the cases and such carcinoma of the prostate we know extends into the trigona of the prostate very, very frequently.

So much for the pathology of carcinomata of the bladder and for the pathology of the benign papillary growths of the bladder. In the papillary growths of the bladder, the base of the tumor should always be subjected to very careful histological examination because there is the most frequent site of the carcinoma.

Symptoms. Practically the first symptom of tumor of the bladder is a haematuria. It is a painless haematuria. It is the haematuria which lasts for a day or several days, stops for several weeks and recurs, then again stops for a shorter

or longer period and again recurs. Such haematuria as I stated is painless. The blood is uniformly mixed with the urine; sometimes the urine is a bright red, sometimes of a darker color but it is never of the same characteristics as that which is colored by blood descending from the kidney. We never find in such haematuria the long ureteral clots which occur in renal haematuria. With vesical haematuria the clots are more rounded in shape. Such haematuria should always demand a cystoscopic examination of the bladder. This should be done by an expert for not only is it necessary to recognize the presence of the neoplasm, but its position, shape, contour, relation to ureteral orifices, all should be made out. Never should we treat a patient with haematuria whether it is painless or not without examination by the cystoscope. Sooner or later complications such as stagnation of urine and pyuria will arise. If the tumor is situated at the ureteral or urethral orifices, and there is difficulty in expulsion of the urine, there will be hydro- or pyo-nephrosis. If we are observant and careful, such complicating conditions will rarely arise. A haematuria is the first indication of vesical neoplasm, coming on at shorter or longer periods with at first little interference with general health, but later serious effects. It calls for cystoscopic examination and the definite outlining of a comprehensive plan of treatment.

The diagnosis is easy by the trained cystoscopist. Those who have experience can as readily make the diagnosis as others but one must be an expert in the manipulation of the instrument.

Treatment. Usually such treatment should be operative, by cutting open the bladder to greater or lesser extent or

through operative cystoscopy or endoscopy. Thus far operative cystoscopy has not been of much value in dealing with tumors of any considerable size in the urinary bladder. Possibly the time may come when we may employ the operative cystoscope, for the removal of such tumors but present instances are uncommon and infrequent. As regards the high frequency current, we know that these can certainly dissipate warts and small tumors on the exterior, and if we can handle the current properly, we may be able to treat the small papilloma or possibly the carcinoma in this way; but this is an unexplored field in which I can give little information. We are using it on the old lady above mentioned.

Operative treatment. The preferable method of treatment should be through supra-pubic incision and opening of the bladder. For benign tumors, papillomata, we should content ourselves not only with a simple removal and cauterization of the base of the tumor but excision of the entire base. Such procedure is not attended with any graver risks or complications than in removal of the papillary growth.

In dealing with the carcinomata we will have to excise a portion or the whole of the bladder. How much of the bladder can we remove and still keep enough to maintain the reservoir function of the organ? It has been proved by Rafael who collected all the cases, that radical cure can be equally well effected by partial removal as by a complete cystectomy. A partial cystectomy is enough to obtain a radical cure lasting over five years. How much of the bladder can we safely remove and yet retain a sufficient function as a reservoir? In one case I have removed over one-half of the bladder and transplanted the ureter on

the affected side into the remaining portion of the organ. That patient could hold the urine three hours. He had to get up twice at night to pass water. He died of a recurrence $3\frac{1}{2}$ years after operation. So removal of more than half of the bladder is possible with preservation of the reservoir function of the organ. Complete extirpation of the bladder is indicated only under the most special indications.

Results. Raphael found that after partial cystectomy the radical cures were 12%, while after complete cystectomy the mortality was much higher and radical cure 8%.

Method. Heretofore it has been considered one of the essentials not to open the peritoneal cavity in operating on the bladder. Opening of the peritoneal cavity was considered an unfortunate complication. Very few tumors are so situated as to permit of their wide removal without opening the peritoneum. Some five years ago, I proposed the wide opening of the peritoneum as a preliminary step, then removal of the glands along the iliac arteries, carefully protecting the peritoneum with hot pads, and after this opening the bladder and removal of the tumor. I have done five such operations with an operative mortality of one. All of these cases were far advanced, not early cases offering favorable result from removal. The one case died from an ascending pyelo-nephritis from the implantation of the ureter in the base of the bladder instead of into the vertex. In the other cases there have been no permanent cures. All suffered from a recurrence of their malady. The one who lived the longest lived three and one-half years, the one who lived the shortest time lived less than

a year. Such results should not be discouraging however. It is our fault for not making earlier diagnoses. With early diagnosis, we can hope for as good results from operative treatment of bladder cancer as in treatment of carcinoma of the breast.

SOME REMARKS ON THE TREATMENT OF PNEUMONIA.¹

BY

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Treatment of pneumonia has been so thoroughly discussed here and elsewhere, that to add to what is known, seems superfluous and out of place. My remarks will be limited to aids which I found of service in my practice during the last four years in the following cases.

G. T., aet. 17, left side, crisis 7th day, cured.

M. H., aet. 10, central, crisis 6th day cured.

A. H., aet. 8, left side, crisis 9th day, cured.

J. J., aet. 37, central, crisis 7th day, cured. Alcoholic.

W. W., aet. 41, central, crisis 7th day, cured. Alcoholic.

H. Q., aet. 31, left side, crisis 9th day, cured. Tubercular. Consultant Dr. D—n.

Mrs. S., aet. 57, double, crisis 9th day, cured. Cardiac complic. Consultant Dr. H—s.

W. S., aet. 40, right side, crisis 7th day, cured. Case irregular. Consultants Dr. B—n, Dr. E—n.

E. J., aet. $3\frac{1}{2}$, left side, crisis 9th day, cured.

L. L., aet. 3, left side, crisis 5th day, cured.

F. R., aet. $1\frac{3}{4}$, left side, crisis 7th day, cured. Consultants Drs. B. and R.

¹Read before the Med. Soc. Borough of The Bronx, Feb. 9, 1910.

M. McG., aet. 6, left side, crisis 7th day, cured. Consultant Dr. B—r.

A. McG., aet. 7, left side, crisis 7th day, cured. Direct infection.

F. E., aet. 6, left side, crisis 7th day, cured.

W. W., aet. 42, left side, crisis 9th day, cured. Alcoholic, second infection within the year.

B. R., aet. 38, double, crisis 7th day, cured. Very severe. Consultant Dr. L. W.

M. R., aet. 2½, double, crisis 9th day, cured.

S. Z., aet. 73, double, crisis 7th day, died.

H. F., aet. 7, left side, crisis 7th day, cured. Consultant Dr. W—n.

K. S., aet. 13, left side, crisis 7th day, cured. Rheumatism, endocarditis, pleural effusion. Consultant Dr. H—s.

P. M., aet. 7, single, crisis 5th day, cured. True croup, 2 months previous.

E. D., aet. 4, left side, crisis 6th day, cured.

J. C., aet. 1½, double, crisis 9th and 15th days, cured. Following measles.

S. S., aet. 3½, right side, crisis 7th day, cured.

G. E., aet. 13, left side, crisis 6th day, cured.

A. K., aet. 4, double, crisis 9th day, cured. Meningism following. Consultant Dr. B—n.

M. H., aet. 37, left side, crisis 7th day, cured.

S. S., aet. 2½, right side, crisis 6th day, cured.

S. A., aet. 9, left side, crisis 5th day, cured.

G. K. aet. 8, right side, crisis 6th day, cured. Following measles, meningism later.

Mrs. H., aet. 53, left side, crisis 7th day, cured.

H. W., aet. 19, left side, crisis 5th day, cured.

Mrs. B., aet. 35, right side, crisis 7th day, cured. Alcoholic.

G. B., aet. 7, left side, crisis 7th day, cured.

Mrs. R., aet. 27, right side, crisis 7th day, cured. Complicated by pregnancy and labor.

Mortality, 1.

Nos. 1, 2, 3, 9, 10, 11, 12, 14, 18, 19, 22, 24, 25, 27, 28, 29, 31, 32, and 34 are ordinary cases.

Nos. 4, 5, 15, and 33 complicated with alcoholism.

No. 6 complicated with tuberculosis.

No. 7 double with cardiac complications.

No. 8 starting with rheumatic joint pains; in about 30 hours pain leaves the joints and locates over the gall bladder; after 24 hours a diagnosis of gall stones is made by consultant No. 1 and myself, with the agreement that operation be suggested if not better in 12 hours; this was arranged for at the end of the period and you can imagine my chagrin 8 hours later when a right central was found. Up to this time there was no pulse-respiration changes.

No. 13 shows direct infection from her sister.

No. 15 second infection within the year in an alcoholic.

No. 16 severe double.

No. 20 starting as rheumatism, complicated with endocarditis and pleural effusion.

No. 21 about 2 months after a very severe laryngeal diphtheria (3,200 units of antitoxin with intubation).

No. 23, 26, and 30 following measles; meningism showing after in 26 and 30.

No. 35 accouchment on third day of disease.

Prophylaxis can be credited to hygiene, namely, cleanliness of the body and mucous membrane, (eye, nose, mouth and throat), exercise in moderation, good nourishment, clean utensils, avoiding kissing the sick, sunlight and fresh air, clean streets, the knowledge that resistance is lowered by worry, fatigue, dissipation, alcoholism and other illnesses, and the disinfection and destruction of the sputa and discharges of cases suffering with the disease, so killing the diplococcus.

Treatment. Absolute mental and physical rest in bed, lightly covered with blankets, in as large a room as I can command, if possible with a southerly exposure, the windows open from the top, the temperature ranging from 60° to 70°, under the control and care of a nurse or other efficient person who can take temperature, count the pulse, relieve the patient from all physical strain or effort, and keep out unnecessary visitors. These rules to hold good until one week after crisis.

The diet is to consist of milk (plain, peptonized, with some cereal, lime water, or milk sugar added, koumyss, matzoon, junket), orange juice, lemonade or grape juice, plenty of sterile water, and later broths, beef juice, raw eggs, scraped beef, custards, ice-cream and strong coffee. Never awake your patients unless necessary, but see that they get enough nourishment to meet requirements, and this at 3 to 4 hour intervals. Avoid carbohydrates and effervescent as they cause tympanitis.

Right here a word on the caloric value method of feeding would be of service, the quantity of each being estimated from the following:

1 gramme of proteid creates 4.1 calories.
1 gramme of carbohydrates 4.1 calories.
1 gramme of fat 9.3 calories.
(Huebner's figures).

One quart of milk represents 650 calories. Fat roughly estimated, quantity for quantity, double the value.

From these figures we can estimate what is necessary to furnish 35 calories per kilo of weight. Remembering that the average man weighs 70 kilos or 155 pounds and his proteid requirement is 80 grammes per day.

Medication. My first prescription consists of calomel 5 grs., bicarbonate of soda and sugar of milk each 10 grs., for an adult, to be taken at once, or divided doses of the same, followed by a saline or magnesia in the morning.

One hour after the calomel, I start with a formula as follows: Tr. aconite one-fourth to one-half normal dose, liquor ammonia acetatis one-half to three-fourths normal dose, liquor ammon. anisate one-fourth normal dose and syr. tolutani q s. to flavor. This to be given at 3 hour intervals, for 36 hours or until I think the stage of congestion is passed. In enfeebled subjects I modify these doses.

This is followed by creasote carbonate or guaiacol carbonate 10 grs. for an adult every 3 hours, and whiskey or brandy one-half ounce, every 3 hours during the interval, until the first signs of crisis, when the guaiacol is discontinued.

For pain in the early stage, apply sinapisms of mustard, the ice bag, inject or give morphine, and for full blooded subjects, dry cups.

In my neighborhood, these seem to be very efficacious.

For temperature, if above 103° and below 105°, reduce by sponging with alcohol

and water equal parts, (keeping down the temperature of the sponging mixture, by adding small pieces of ice) at the same time using friction. If above 105° cold packs, plain or after Baruch's method are applied.

For sleeplessness, cold applied to the head, veronal grs. X in a warm drink, chloralimide grs. XX in cold solution and at times morphine guarded.

For tympanitis, use turpentine enemata (dram 1 to the pint) saline irrigations, ice bags and aseptic ergot.

Cardio-Vascular System. Strychnine, in 1/30 grain doses of the nitrate or sulphate, every 3 or 4 hours, has been my standby in the above cases; starting its use on the fourth day or when indicated to increase heart force by tonic action on the musculare and vaso-motors (it is also a respiratory stimulant).

For low arterial tension there is nothing better than digitalis, preferably in the form of the infusion, providing the temperature is below 103°. If it is above this give Tr. strophanthus m iv every 4 hours.

For failing right heart, give camphor, nitro-glycerine, or alcohol.

Oxygen, if used at all, should be given from the beginning, not as a forerunner of the end.

Caffeine and saline transfusions I have never used. I would try them for quick effect on the vaso-motors of the splanchnic vessels, where we have symptoms of bleeding in this area, i. e., rapidity of the heart and sinking of blood pressure, with this or shortly after tympanitis, the patient presenting an exsanguinated appearance, with beginning evidence of collapse, the pulse becomes irregular, empty and so rapid that it cannot be counted, coma,

heart irregular, sounds disappear and death.

Conclusions. There is no specific to date. The extract of leucocytes (after the method of Opie, modified by Hiss) may be a step in the right direction.

Aconite lowers blood pressure, slows the pulse and decreases the output of the heart; the arterioles being the part first acted upon, in that they contract, so decongesting the alveoli in the congestive stage, thus carrying out the ideas of Osler's system where it states, "We must lessen congestion, which become points of lessened resistance, and hence vulnerable to further infection." Aconite also acts as an antipyretic and sedative.

Liquor ammonia acetatis acts as a harmless non-depressing febrifuge and diuretic.

Guaiacol carbonate or creasote carbonate acts as an antipyretic, diaphoretic and antiseptic and tends to slow respiration. My idea is, that they probably increase leucocytosis and the eosinophiles, so stimulating resolution.

All treatment is of no avail if the heart is not watched closely; here lies our success or failure.

The above treated cases did not show marked prostration at crisis.

Looking over my histories, I have found a few cases (not listed) which started seemingly as lobars and declined with marked perspiration and little prostration at the end of the congestive stage. (Osler, if I remember right calls these seemingly aborted cases, grippal ones).

As a debt to my colleagues I have brought these facts to your attention to show that there are still good things among the old, and request that further study along these lines be made, especially as

to the action of guaiacol carbonate and creasote carbonate on the leucocytes and eosinophiles in the presence of fever.

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PHLYCTENULAR DISEASE.¹

BY

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One of the most common affections encountered in children by those having to do with a varied practice, is that nutritional disorder manifested by phlyctenular disease of the conjunctiva and cornea, and eczematous conditions of the face. Early careful observers noted the synchronous appearance of these affections and no less an authority than Fuchs records his observations on the ocular symptoms under the title of "Conjunctivitis Eczematosa." Scarcely any of the very modern writers are inclined to regard the two affections as identical in their histopathology but all are united in their views on the etiology, disturbances of nutrition being the chief factor in each. Consequently, your program committee has deemed it

wise to have the symptom complex, if I may use the term, discussed from its ophthalmological and dermatological standpoints.

From an ophthalmological point of view, the condition is first manifested by a minute red elevation which usually makes its appearance on the conjunctiva near the margin of the cornea. This is spoken of as the "efflorescence" and consists of an accumulation of round cells and inflammatory exudate covered by the epithelium of the conjunctiva. The pressure upon the conjunctival epithelium destroys its resistance and it is shortly worn away by the motion of the lids or washed away by the excessive secretion of the lacrimal glands. Some of the round cells and exudate are also removed in the same manner and a minute superficial gray ulcer is exposed to view. As in other inflammatory processes the blood-vessels leading up to the focus of inflammation are dilated and separated by extravasated leucocytes.

The dilatation of the blood-vessels produces a triangular area of redness, the apex of which is the efflorescence or phlyctenule. Consequently the whole area is swollen and elevated so that the small ulcer is above the level of the base of the conjunctiva. The top of the efflorescence having been removed, the inflammatory exudate is thrown off through this ulcer and the latter sinks to the level of the conjunctiva and undergoes resolution without visible damage to the conjunctiva.

From this it may be readily seen that the disease is essentially focal in that it begins at one site, but may become pretty well distributed by the occurrence of several of these phlyctenules at or about the same time. When they are few in number they assume larger proportions

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than when there are several present. Consequently, the smaller ones are disposed to go through their course more rapidly, not infrequently without disintegration. The nodules are confined to the conjunctiva covering the globe of the eye but the vascular reaction in severe cases may extend to the conjunctiva covering the lids. The nodules also occur on the cornea and there consist of an accumulation of round cells situated between Bowman's membrane and the epithelium. The breaking down of the phlyctenule in most cases is not attended with permanent damage to the cornea as only the epithelium is thrown off, but in cases where the infiltration of round cells extends through Bowman's membrane, an opacity results proportionate to the severity of the case.

Occasionally, the ulcers following the disintegration of corneal phlyctenules assume a serpiginous type and heal with considerable scarring of the cornea. In very extreme cases the corneal involvement is manifested by a diffused, deep-seated, infiltration of a grayish or yellowish color, which may undergo absorption or break down into pus. In other cases, not necessarily severe, the disease gives rise to a new formation of tissue on the cornea, a variety of pannus.

Although the diseased eye may appear tremendously inflamed to the observer, it will be noted that the discharge is largely unaltered tears in abundance. There is seldom any mucoid or muco-purulent secretion except in those cases where the palpebral conjunctiva has become involved, consequently the lids are not stuck together in the morning. There is usually eczema of the eyelids and face, attributed by some observers to the profuse lachrimation but by the majority regarded as merely an-

other evidence of the same nutritional disturbance.

The subjective symptoms of phlyctenular disease are especially characteristic. Owing to the exposure of minute nerve filaments of the cornea the dread of light is intense and the child shows this photophobia in a number of ways. Coupled with this is the spasm of the lids, blepharospasm, in an effort, not only to shut out the light, but to fix the lids and prevent friction upon the denuded areas.

In a very simple case with one phlyctenule it requires about one to two weeks for resolution. However, this is not common; usually there is a succession of phlyctenules prolonging the disease several weeks, or there may be a rather rapid subsidence with a recurrence of the lesions from time to time. Altogether it may be regarded as a chronic disease.

The outlook is favorable. The cornea, however, may be the seat of scars of varying size and density depending upon the severity of corneal involvement. This possibility should always be borne in mind. Resulting from this there will be diminished vision which may be further increased by the myopia that ensues in an effort to overcome the corneal astigmatism produced by the scars.

The cause is to be found in faulty nutrition. Either the child is fed articles of diet unsuitable for any child of the same age or the child's metabolic processes are so disturbed that it is unable to assimilate the ordinary foods. As most of the cases are children and children of the ignorant poorer classes it may be assumed that both these causes are present in varying proportions. While many are insufficiently fed at the home table, it is not infrequent to observe them indulging con-

tinuously in all the luxuries of the nearby candy shop. It is a question whether it is not ignorance that is the chief cause in many of these cases. A glass of milk daily could be substituted for these childhood extravagances daily, if the mother was so inclined in very many cases. A large proportion of cases also occur in those, both children and adults, who have become greatly debilitated as the result of the infectious diseases. Many children are tuberculous and again a considerable number are regarded as just "delicate." For many years the condition was considered as scrofulous, on account of the enlarged cervical glands, nasal discharge, ear troubles, and skin manifestations that may accompany the affection of the eyes.

Treatment.—As in all other ocular inflammations, the free use of a boric acid collyrium is indispensable. The addition of five or ten minims of adrenalin solution to the ounce is of value in reducing the congestion, and cocain may be used in weak proportions for the relief of the irritation.

In simple uncomplicated cases of a mild type, the dusting of finely powdered calomel is quite serviceable but should be withheld if the patient is at the same time taking internally syrup of the iodid of iron or any preparation containing iodine. Yellow oxid of mercury in ointment in the strength varying from one-half to four grains to the ounce of petrolatum is a common local treatment. Both these preparations being irritants their use is contraindicated in the presence of progressive ulcers or recent infiltrations of the cornea. Sometimes photophobia is so great as to necessitate douching the lids with cold water.

When the phlyctenules involve the cornea atropin is indicated or still better atropin and iodoform in ointment. Peripheral ulcers are at times benefitted by eserin, according to some writers. In advancing ulcers, the cautery is indicated. In large ulcers heat and moisture should be applied. Pressure bandages are indicated under such circumstances. Ordinarily the patient will be brought to the physician with the eyes bandaged, in all affections. The bandages should be removed and the patient instructed to wear plain dark glasses until otherwise directed.

The general treatment is of greater importance since being so readily carried out it is consequently so readily neglected. A thoughtful desire to prevent or to rid the child of this affection is nearly always attended with most gratifying results.

All children up to ten years, at least, should be made to keep regular hours, in the first place. This is inexpensive treatment and there is no reason why it should be neglected. Again, a child, if disposed to be delicate, should not be housed for the entire day. Granting that the father is a drunkard or dead, or makes very little wages and the mother is compelled to work either at home or in a mill or at domestic service it does not justify confining a child five or six years of age all day either at the mother's home or grandmother's home, where the air is kept hot and stifling all the time out of deference to the elders' ideas of luxury. It would seem, from their point of view, to be a high crime to entrust these children to the care of the Playgrounds Associations' caretakers or similar organizations. The exposure to fresh air and the sunlight if for only the time consumed in going to and from a day nursery or playgrounds

would be an advance over the solitary confinement the poor child endures. But it remains for the family doctor to devise some means of disseminating the knowledge that fresh air and sunshine are necessary to health and he should be able to show how these may be obtained. It seems scarcely necessary to add that tea, coffee, whiskey, beer, pretzels, candy, pickles, and mashed potatoes in abundance, should be excluded from the dietary of a delicate child. Many of these children fail to receive sufficient bathing and nothing seems so invigorating as hot salt baths at this age. Cod liver oil should be given to all delicate children but not in emulsion. If plain cod liver oil of a good grade is given in very small doses and gradually increased the repugnance to it will be short-lived. The other tonics, iron, quinin, strychnin, syrup of the iodid of iron, arsenic, etc., may be given at the discretion of the physician. When the inflammatory symptoms subside the refraction should be examined and glasses ordered. They are always needed and the child should be given all the aid possible in the preservation of its eyesight.

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GONORRHOEAL INFECTION OF THE URETHRA AND BLADDER IN THE FEMALE.

BY

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Urethritis in the female is almost invariably due to gonorrhoeal infection, and may be acute, subacute or chronic. The acute form is rarely encountered, and subacute and chronic forms are often not recognized. This seems strange

in view of the fact that most authorities claim that the urethra is the most frequent seat of primary gonorrhoeal infection in the female. With this view, however, I do not agree for from personal observation I believe the cervix uteri is the most frequent seat of primary infection and that it often occurs and exists without infection of the urethra.

The chief reasons that urethritis is so often overlooked in the female are, first the types that prevail most frequently, viz., the subacute and chronic, cause little or no discomfort to the patient and the increased secretion that may occur is disregarded or regarded as leucorrhoea, which to many women, is viewed only in the light of a necessary inconvenience; and second, the discharge from the urethra is often not perceptible to the examiner unless he looks for it.

It should be borne in mind that in its normal state the urethra is dry and free from secretion, therefore any secretion from the urethra should be regarded with suspicion and submitted to microscopic examination. I would urge that in examining every gynecological patient the urethra should be stroked from within outward along its course with the finger in the vagina so as to express any secretion that may be confined within the urethral glands and that all secretion thus found should be examined microscopically. The manner of taking a specimen for examination is important. The platinum loop ordinarily used is not satisfactory, as it often fails to remove sufficient secretion for examination when it is scanty. For a long time I have used for this purpose a small, thin applicator such as is used for making applications to the ear. A small bit of absorbent cotton is twisted tightly around

the end, which is inserted into the urethra after the external orifice has been cleansed of secretion. If necessary a bivalve urethral speculum is used for spreading the meatus. This speculum also affords a view of the urethral surface.

There is not much information to be obtained for diagnosis by palpation of the urethra through the vagina in subacute and chronic inflammations of the urethra. The diagnosis must be made from examination of the secretion and inspection. However, failure to find gonococci in the discharge does not necessarily imply absence of infection. Frequently stimulation of the glands by an application of the galvanic current—5 M. for two minutes by means of a conical electrode such as is employed for dilating the cervical canal of the uterus will often reveal gonococci that were not before in evidence.

Treatment. For many years I have used iodine in aqueous solution for these conditions and find it the most satisfactory application for overcoming inflammations due to gonorrhoeal infection. The irrigations are made with a blunt pointed nozzle such as is used for the male and the reservoir is elevated only about two to three feet above the couch upon which the patient is reclining, so as to avoid forcing the solution into the bladder. This precaution is taken of course only when there is no complicating cystitis. The patient is made to void the urine before being placed upon the table. Because of its convenience the tincture of iodine is used for preparing the solution, the strength of which may vary from half a dram to a dram of the tincture to a quart of hot water. In the subacute stage the weaker solution is used, and in the chronic stage the stronger solution, every day until the gonococci disappear from the

secretion. Then the irrigations are given every second day until the discharge ceases. The method of irrigation is to repeatedly fill and distend the urethra with the solution and then withdrawing the nozzle permit it to be expelled. Massage of the urethra from within outward by the finger in the vagina is advisable, before irrigation to empty the urethral glands.

In obstinate cases the iodine dissolved in glycerine, in the proportion of one dram of the tincture to four ounces, is injected into the urethra by means of an ordinary piston syringe, in such quantity as to thoroughly distend the canal. Involvement of the urethral glands is best overcome by massage and stimulating applications of negative electrolysis through a metallic electrode passed through the canal into the bladder. The strength of the current should not exceed 5 M. continued for two minutes, and the applications should precede the irrigation. This application stimulates an evacuation of the glands that is sometimes not accomplished by massage alone.

It is advisable in these cases to administer internally some agent that will act as an urinary antiseptic and for this purpose I use hexamethylenamine in doses of seven grains three to four times a day, half an hour to an hour before meals and at bed time. The usual dietary restrictions are enforced, but are not so important in the chronic as in the subacute and acute types of the disease.

Iodine is the most reliable antiseptic known to me and its penetrating power surpasses that of any other agent. This has been the reason for its selection. It stimulates and is astringent but does not irritate and in the strength used does not coagulate albumen, as do silver nitrate and

bichloride. Hence it does not coagulate the capsule of the germ but destroys it by penetrating its capsule.

When the stronger solutions are employed a burning sensation may be complained of until the next urination, but prolonged irritation has never been observed. I seldom find it necessary to employ any other agent in curing urethritis. Nitrate of silver next to iodine is the most valuable remedy we have and I occasionally use it in obstinate cases. Sternberg (*American Journal of the Medical Science*, April 1883,) reports test made of the action of iodine upon gonococci, showing that they are destroyed instantaneously by a solution of 1 to 4,000.

The solution of one dram of the tincture of iodine to the quart is approximately 1 to 3,400.

Gonorrhoeal Cystitis. Gonorrhoeal cystitis is either rare in the female or the possibilities of demonstrating gonorrhoeal infection of the bladder is difficult. We may however conclude that it is due to gonorrhoeal infection when a cystitis is found associated with urethritis. It is probably more rare in the female than in the male, perhaps because urethritis in the female is so often unrecognized and hence not treated or maltreated.

Bierhoff has tabulated 92 cases of cystitis, of which number 67 were catarrhal and twenty-five suppurative cystitis. Gonorrhoeal cystitis was found only among the latter (the suppurative type) and there were only five cases in which gonococci were discovered in the urinary sediment.

Gonorrhoea is undoubtedly a cause of cystitis both in the acute and chronic forms though it may not be actually demonstrable always by the microscope or by culture.

Culture of the gonococcus from the urine is certainly difficult, if not impossible. Hence if the infection is revealed by the microscope in the urinary sediment in conjunction with its presence in the urethral secretion we may hold this as sufficient evidence of the nature of the infection. The cystoscope is rarely required for the diagnosis of cystitis and should not be used in the acute stage of the disease. The microscopic findings are quite sufficient to establish the diagnosis of all varieties of cystitis. The cystoscope may however be required to locate circumscribed areas of ulceration when the conditions prove to be obstinate.

Most frequently cystitis due to gonorrhoeal infection is confined to the base of the bladder, involving the trigone. It is rarely diffuse and when so it is probably due to a mixed infection.

Treatment. Cystitis of gonorrhoeal origin I find yields promptly to irrigation with iodine solution. The strength of the solution used varies with the stage of the inflammatory action, as shown by the acuteness of the symptoms, from 15 to 30 M. to a dram, to the quart of warm water. In the acute stage I advise daily irrigation with warm boric acid solution to which an ounce or two of camphor water is added, with the administration of hexamethylenamine internally in doses of 5 to 7 grains every two hours together with a mild saline to empty the intestinal tract.

As soon as the very acute symptoms subside daily irrigation with the milder solution of iodine is commenced, and the strength of the solution is increased as tolerance is established. The patient is first made to empty the bladder before being placed upon the table, then the urethra is further cleansed

by irrigation with the iodine solution and the solution is projected into the bladder by elevating the reservoir sufficiently to overcome the sphincter action of the neck of the bladder. The tolerance of the patient is a fair guide to the amount of solution to be introduced, but it is not necessary to use more than three to six ounces. Distention of the bladder is unnecessary and inadvisable in these cases. If the patient cannot expel the solution in the recumbent position a catheter is inserted, the solution is withdrawn and a similar quantity is injected through the catheter which is then withdrawn and the solution allowed to remain until the next urination. In the beginning when the bladder is very sensitive this will be as soon as the patient gets on her feet. The action of the iodine solution is so prompt however that longer retention of the solution is not essential.

When there is involvement of the vagina or cervix uteri a tampon partially saturated with glycerine and iodine in the proportion of one dram of iodine to four ounces of glycerine is placed against the cervix and retained for 12 to 24 hours. Of course any other treatment of the cervix or vagina that is required is instituted before this tampon is inserted and usually before irrigation of the bladder is made.

The internal administration of an urinary antiseptic is even more essential in cystitis than in urethritis. I have found nothing superior or even so good as hexamethylenamine given in doses of seven grains three to four times a day half an hour before meals and at bed time. Given in conjunction with some mild saline to promote free evacuation of the bowels and counteract the evil effects of intestinal toxemia it is an ideal remedy in these conditions. Of course the customary dietary restrictions are enforced.

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IMPERFORATE ANUS.

BY

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Imperforate anus is one of those conditions that is only occasionally seen, but when found it must be promptly and fully appreciated and quickly remedied or we lose the baby. The frequency of its occurrence varies with different statisticians. Moreau saw four cases in over forty years' experience in the maternity hospital at Paris. Couty in Havre saw three cases in 3,500 confinements while Zohre in Vienna saw but two in 50,000 maternities (Tuttle).

In the fetus the rectum is formed from the embryonic intestine (the enteroderm) and at first ends blindly. The anal canal forms about the fourth week by an involution of the epiblast. Sometimes the involution does not occur and there is no anus or it fails to connect with the rectum.

Malformations of the anus (meaning the whole anal canal) *are divided into:*

1. Entire absence of the anus.
2. Abnormal narrowing of the anus.
3. Occlusion of the anus; a. partial, b. complete.
4. Abnormal opening of the anus upon the skin.

Entire Absence of the Anus. Entire absence of all external evidence of the anus is very rare and is promptly noticed by the accoucher, but when the anus is imperfectly developed the defect may be easily overlooked. Sometimes only a few signs mark the location as a depression or protrusion of the skin at this point, discoloration or the peculiar puckering rugae. Very rarely the raphae extends from the scrotum to the coccyx without a break. The presence or absence of skin

markings of the anus, however, bear no relation to the point of termination of the rectum above. In fact there is no way of determining beforehand which case can best be reached through the abdomen and therefore all must be subjected to a careful perineal dissection. When the anus is occluded the rectum may terminate anywhere above the skin or open into some other viscus.

Very frequently we find associated with rectal malformations other abnormalities of the pelvis and genito-urinary organs, i. e., narrow pelvis, atrophy of the vagina, extrophy of the bladder or hypospadias.

Diagnosis: The diagnosis is simple at times and again very difficult. Where there is no trace of an anal opening the condition is at once recognized and even if not the failure to void meconium must attract attention by even the most careless nurse. The child soon becomes restless and constantly strains as if at stool. The abdomen distends and is tense, the skin is cyanosed and in a couple of days the child vomits its food and feces. In other words we have the picture of acute intestinal obstruction.

Abnormal Narrowing of the Anus. Sometimes the anal canal is patent throughout and the anus may appear normal on inspection but the canal will be found constricted in some portion between the rectum and anal opening (a distance of one-half to one inch). This narrowing may be annular (diaphragm) a few fibers extending across the canal or it may be lengthwise and extend the full last inch or more of the bowel. Such a malformation differs from the strictures of the rectum and anus that occur later in life, the result of inflammation or disease in that

there is no scar tissue. Connective tissue hypertrophy may be added later because of the trauma caused by the feces being driven through the narrow passage. Many individuals go through life with a partial occlusion of the anal canal and complain of chronic constipation from infancy, the real condition being never discovered.

Diagnosis: The diagnosis of this condition is much more difficult than the preceding, the total occlusion, because liquid feces and gas have exit and it is only later when the feces are formed that any disturbance is noted. The diagnosis is made by seeing the size of the fecal masses voided and by digital examination. Serremone, quoted by Tuttle, says that these people both in childhood and adult life are subject to anal fissures. It must however be remembered that fissures in infancy are frequently syphilitic.

Membranous Occlusion of the Anus. This consists of a diaphragm across the anal canal. If at the outside of the anus it will consist of skin and appear as a continuation of the raphae. When above the anus it is composed of mucous membrane or connective tissue. If the obstruction is only partial it will appear as a crescentic band and the channel left may vary considerably in size. This partial occlusion is frequently met.

Complete obstruction is rare and of course demands immediate attention. When at the anus the diaphragm resembles the hymen and is composed of fibrous or muco-cutaneous tissue. It is thin and flexible. If the rectum is normal above, this membrane will bulge with meconium.

Treatment. The treatment of occlusion of the anus is of course surgical and

the proper time at which operation is to be performed is important. If the atresia is complete it must be relieved at once that the child may live. Any postponement wastes the strength of the baby besides adding new complications. Where the atresia is not absolute, however, and the meconium and liquid feces are voided, the operation may be postponed until the child has greater endurance.

Operation. The new born baby will withstand quite as much surgical shock the first day as it will several days later and the earlier the operation is performed the better the prognosis. No anesthetic is necessary.

Before beginning the operation a careful inspection and palpation of the perineum and buttock should be made to locate the rectum if possible. Sometimes a greenish tinge is imparted to the thin skin covering the meconium filled end of the rectum. Or a bulging of the tissues may be found at some point. With one hand on the abdomen and the other on the perineum an impulse may be felt from the rectal pouch when the child cries or strains. Anything that will help determine the location of the rectum is of course to be considered.

The introduction of an aspirating needle or trocar is mentioned only to condemn. Even if the needle enter the rectal pouch it may have passed through a diverticulum of the peritoneum and allow meconium to enter the free abdomen. The rectal pouch is always under considerable tension in these cases and puncture with even a fine needle may cause it to tear and pour the meconium into the peritoneum. Careful, patient dissection gives so much more satisfactory results that the trocar should never be used.

For esthetic reasons the anal opening should be made as nearly as possible in the normal site and surrounded by normal muscles and tissues. If no anus is present a straight incision is made from about where the anus should be back to the tip of the coccyx (a distance of about one and one-half inches). If there is a rudimentary anus the incision begins at its posterior margin. After cutting through the skin and connective tissue we come to the sphincter muscle or a band of fibrous tissue which may replace it. If this is found it should be split by blunt dissection instead of sharp incision. After passing this muscle the dissection can be easily carried up.

Regardless of where the rectum may be indicated by the surface examination the incision should be in the median line and the dissection carried up. In this way the anus is properly situated and the dissection avoids the bladder or other pelvic organs.

When the rectal pouch is found, it is brought down if possible. Of course if this can be accomplished before its contents are evacuated the better, and here we have the only use for a trocar. If the pouch cannot be exposed it may be tapped and the meconium allowed to escape. The gut is relaxed when empty and is then more easily brought to the surface. If the pouch is tapped it should be firmly grasped and held and the wound packed with gauze. Of course if it can be brought out before rupturing, so much the better.

After the rectal pouch has been brought down and emptied, the mucous membrane is attached to the skin edge of the incision at the anal margin. Cat-gut sutures are used. The mucous membrane must be drawn well down and outside of the

wound. Subsequent retraction will always draw it back within the anus. Frequently this retraction is greater than anticipated. The posterior perineal wound is now closed with deep, closely placed sutures.

The dressings are loose gauze held in place by a diaper. These should be frequently changed. To prevent the baby straining a snug bandage should be placed about the abdomen. Cicatricial contraction is likely to close the newly formed anus unless prevented by occasional passage of bougies or dilators.

Sometimes the anus together with the sphincter and anal canal are normal but the rectum fails to connect and descends alongside of the anal canal. The direction of incision here depends upon whether the rectal pouch is palpable or not. If so it may be incised into, but if not palpable the posterior median incision is indicated.

Where the anus is partly occluded or narrow it seldom calls for surgery during infancy at least as long as liquid feces can be voided. Dilatation with bougies or uterine dilators carefully but frequently performed is about all that is necessary. If the occlusion is due to a band it may be clipped away with scissors.

When the rectum terminates high in the pelvis or in the abdomen it cannot be reached through the perineum, and an abdominal section is indicated to find the lowest end of the colon. Its position may be anywhere in the abdomen but is usually low. When found, colotomy is performed. When the rectum opens upon some other part of the skin than at the normal anal site or when it empties into some other organ namely, bladder, uterus or vagina, the conditions are different from those included in this paper and will not be discussed.

Case. Baby Brown.—This little female patient was referred to me by Dr. G. W. Watts, and was operated upon at the People's Hospital, on May 28, 1907. The anus appeared normal and the sphincter was well developed. The anal canal was patent for about one-half inch up and there ended. No rectal pouch was palpable anywhere about the buttock. The baby's color was bad, heart action was tumultuous and any food that was given was promptly vomited. The signs of acute intestinal obstruction were all present.

An incision was made from the posterior wall of the anus to the coccyx and carried up by blunt dissection along the hollow of both of these bones for a distance of about one inch, when the green sack of the rectal pouch came into view. This rectal pouch looked much like a blue grape in the wound and resembled a cyst in touch. The dissection was carried well around the edges of the sack, but it seemed impossible to bring it down. The sack was next grasped with two artery forceps about the middle of its exposed part to retain it well in the middle of the field. The wound was walled off and the sack punctured. In the next five minutes fully three ounces of meconium was voided and the sigmoid seemed empty. The field was flushed with sterile water, the packs removed and the wound well flushed. The wound in the gut was then further enlarged and held by the four clamps. The mucous membrane of the anal canal was denuded by scraping and the rectal wall was drawn down and sutured to the skin outside of the anus. The posterior wound (from the anus to the coccyx) was closed with deep stitches. Cat gut sutures were used throughout.

A large loose fluff of gauze was placed at the anus and retained by a diaper. This diaper was filled with meconium and had to be changed within an hour and was changed every hour or two for the whole first day. After that the evacuations were normal as any infant. The stitches softened and sloughed off in ten days and the baby passed out of my care. About three months later stenosis occurred rather suddenly one day. There was no evacuation for a day or two and the baby showed signs of toxemia. The anus was

dilated and the bowels immediately emptied themselves and the symptoms subsided. The mother's attention was called to these symptoms and their importance and since that time she has brought the baby for anal dilatation about once each month.

At the present writing the baby is in fine physical condition. Evacuations are free and unobstructed and there is good bite in the sphincter. This child is only an infant and has developed no control of the sphincter as yet, but we expect she will grow up a normal child. There are no other fetal defects or abnormalities apparent about the baby.

I have gone into details about this case not for its special features, but because similar babies are born far removed from hospital or city advantages and must be attended by the accoucheur immediately or the baby will die. If therefore this paper serves a single case and is a means of helping to save one infant our efforts are bountifully paid.

438 East Forty-sixth Street.

THE IMPORTANCE OF THE AFTER TREATMENT OF INJURIES TO THE FOOT AND ANKLE.¹

BY

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In speaking tonight on the importance of the after treatment in injuries of the foot and ankle, I simply wish to call attention again to the importance of restoring the parts injured as nearly as possible, not only to their normal anatomical relations but also to their normal function. On account of adhesions, shortened ligaments and fascia, too much or unfortunately-

placed callus while yielding an anatomically satisfactory result, may prove functionally unsatisfactory without considerable manipulation, sometimes extending over a long period of time.

It is not my purpose to present to you a classification of these injuries, nor to enter upon a lengthy exposition of all the possible forms of injury to which our feet are subject. The general principles of the construction of the foot, with reference particularly to its weight bearing function, must be kept clearly in mind. The centre of gravity must fall through the foot and nearly through its centre, in order to make proper use of the various bones, joints, ligaments and muscles, without undue strain on any one of them. The patient must use proper shoes and use his feet properly.

I do not intend to open a discussion as to what constitutes a proper shoe. Suffice it to say, that I have been brought up by Dr. Whitman, and until I find some line of reasoning that appeals to me as better than his, I shall continue to follow him in his present methods of treatment.

The simplest form of injury is that commonly called a strain or sprain. If this is properly treated, there will be no after treatment required, so let us look a moment at the prevention of after treatment. The treatment of sprains depends partly upon the site of the sprain, partly upon its severity, and partly upon the length of time that has elapsed between the injury and the beginning of treatment. The principles involved are to secure rest and immobilization of the injured portion without undue strain on some other portion, or complete disuse of the entire foot. There are sprains involving so many parts of the foot that complete disuse of the

¹Read before the Hospital Graduates Club, November 18th, 1909.

member may be necessary temporarily. To accomplish this, it is better, if possible, to apply a plaster of Paris bandage from the toes to the knee, and to have the patient up and about, rather than put him to bed. The circulation is so much better when the extremity is in use that repair is quicker, and because of this *massage is very valuable*. It should be employed whenever the patient can have it done properly. In the intervals between the massage treatments, proper means should be taken to prevent straining the affected part.

The ordinary site of the sprain is the outer side of the ankle or the outer border of the foot. In either case, when the injury is not too severe, it is my custom to use a stirrup of two thicknesses of adhesive plaster, two inches wide, extending from the head of the fibula down under the heel and up the inner side of the leg, back to the knee. The foot must be held at a right angle to the line of the leg, and the stirrup passes directly under the anterior end of the os calcis, with a perpendicular pull. In this manner, the foot may be slightly abducted to allow relaxation at the point of injury without the risk of undue strain on the internal ligaments. This stirrup is secured by several turns of one inch adhesive plaster, making the ordinary figure-of-eight bandage around the foot and ankle. I have never had any trouble from too much constriction, but one might make the turns too tight and so cause considerable swelling of the fore-foot.

If the sprain is further forward, the ankle is held with the stirrup and figure-of-eight, and the turns of the one inch plaster are continued around the foot, encasing it as far as the toes. At times it is advisable to apply further strips, either

of the one or two inch width, around the back of the heel and ankle, and sometimes additional strips along the sole. This makes a combination of the Gibney basket strapping and the Whitman stirrup, with the further addition of the strips along the sole. A snug fitting muslin or gauze bandage should be applied from the toes to the knee, if the injury is recent or if there is oedema to be reduced. In later cases, if the sticking plaster is properly applied and is of good quality, this is not necessary. The patient should at once put on a high-laced shoe and be instructed to walk without limping. This is of considerable importance, because if the patient begins to limp the habit persists after the cause has ceased, and is a difficult one to break. The patient is instructed to walk with a step short enough, with each foot, so that limping is not necessary.

Many sprains are followed by "flat foot," and many have as their underlying cause the condition of weakness—improperly it seems to me,—termed "flat foot." This discussion is not on the so-called "flat foot," but attention is drawn to the fact that the height of the arch is frequently in direct, and not indirect proportion to the amount of pain. The most painful foot is almost always the weak high-arched foot, so that to my mind the difficulty should be termed "weak foot." As a matter of fact, at the Hospital for Ruptured and Crippled we see comparatively few flat feet.

The various more serious injuries,—ruptures of ligaments, and fractures of any of the several bones of the feet,—may be followed by serious disability, by no means so easily managed as the ordinary weak foot.

Once more let me say that I do not intend to try to specify each and every pos-

sible injury; but usually after a fracture there is a certain amount of stiffness, no matter how correct the position may be. A good shoe, exercise, hot and cold douching, massage, may be all that is needed, but the three cases that I shall briefly outline to you required further treatment, and perhaps a little better care immediately following the injury might have lessened the duration of this after-treatment.

Pott's fracture is probably the most common fracture about the foot. Associated with the fracture of the fibula, there is always some injury to the internal lateral ligament and internal malleolus, and generally some separation of the malleoli with displacement of the astragalus backward. The reduction of the deformity in the fibula must be complete, or we are left with a valgus deformity, strain on the inner ligaments of the ankle and foot—painful weak foot. This can frequently and—if the deformity is not too great—usually be remedied by raising the inner border of the sole of the shoe; sometimes without any further treatment except exercise, massage and douching. When there is more, but not great, deformity and stiffness, adhesive plaster strapping—applied as described for a sprain,—except with the stirrup beginning at the tip of the external malleolus instead of the head of the fibula, and applied with a strong pull to adduct the foot as much as possible,—may suffice, if persisted in. More severe cases might need manipulation under ether, with or without refracture.

A case in point is the following:

E. D., age fifty-three; laborer; admitted to the City Hospital, June 26th, 1909. His injury was caused by falling from a wagon fifteen months prior. In a hospital 2½ months in plaster of Paris.

Has done no work since. His right ankle showed thickening and separation of the malleoli, angular deformity of the fibula about two and one-half inches above the joint, with displacement of the astragalus backward. It was so long since his injury was received that it seemed inadvisable to attempt manipulation under ether; consequently he was strapped, his shoes were built up on the inner side, and a Whitman flat foot brace was made for him at the Hospital for Ruptured and Crippled. He is improving slowly, as he is no longer a young man, but if at the time of his injury he had been anesthetized and the bones returned to their normal position, the later work would have been very much lessened.

A case showing more serious injury with greater apparent deformity, but with a good ultimate result, is the following:

T. K., a painter; on October 31st, 1904, he fell from a scaffold on the elevated portion of the subway, sixty or sixty-five feet, striking on his heels. He was taken to the hospital, where he remained eleven weeks in plaster. Then he was at home unable to go about for two months. Later he went to a Dispensary, where the X-ray showed fractures of the os calcis, astragalus, and a Pott's fracture of the fibula in both feet. He was told that there was nothing for him to do but exercise and "wear plates." He continued going to this dispensary for about six weeks, and then came to the dispensary at the Ruptured and Crippled. At that time he was able to get about on the level floor with two canes, but he had to be carried up and down stairs. His feet came as near being absolutely stiff as any I have ever seen. Everybody came to look at his feet, and one man wanted him to have the astragalus removed, hoping thereby to reduce his deformity and give him a useful foot. He refused to have any operation done, and without much hope of success I had his shoes fixed and began to twist and strap his feet. I supposed that after he had been twisted a few times he would give it up on account of the pain and would decide to have the operation. But he was game, and while his language was sometimes rather lurid, we kept at it until we achieved a certain measure of success. Af-

ter two or three weeks he was able to go over the stairs alone, and I suppose it was that improvement which induced him to continue. In about three months he was at work, doing apprentice work, painting floors and the like. At the end of a year he was back steeple-jacking again, for the patient is a steeple jack, his last high work having been the ball at the top of the Metropolitan Life tower. About a year afterward it seemed as if a real twist under ether would be worth while, so he came over to the City Hospital and I used as much force as I dared, but could not completely reduce the deformity. Since then he has had no pain or disability whatever. The result is far from being anatomically perfect, but use is of more value than appearance, when it comes to a working-man's feet. If I had known as much when I first saw him as I do now, and had had the same privileges at the City Hospital that I now have, I should have urged his having the twist under ether first; and under similar circumstances again, I should use sufficient force to adduct the foot, and then afterward work to get the motion back.

Another less readily discovered injury is fracture of the os calcis. Since the use of the X-ray has become universal, more of these are being recognized. There is usually, I think, some impaction which masks the real injury and makes the diagnosis difficult. In the presence of general swelling and tenderness it is difficult to palpate the os calcis. The question is not so much just where the injury is; as, what are you going to do about it? And the answer must be, put and keep the foot in such a position that no matter whether or not there is a fracture, and no matter whether you get motion later or not, the superimposed weight will fall properly.

If that had been done originally in the following case the man would have been back at work sooner.

P. P. aged 40; laborer; hurt his right foot, August 26th, 1909, falling about ten

feet on his right heel. He was treated by the Company doctor. He was in bed for nine weeks and was then told to go to work. He attempted to do so and found that he was unable. He came to the Dispensary where it was found that he had a fracture of the os calcis, with practically no motion in the ankle joint. His foot was in the position of valgus. He was strapped with adhesive plaster in partial correction, and the sole of his shoe was raised a quarter of an inch along the inner side. There was very marked thickening of the os calcis. It is now some weeks since he came under treatment; the valgus deformity has been overcome, the thickening in the os calcis is very largely reduced, the motion in the joint is nearly free, the pain has disappeared, and I expect to apply a Whitman brace on Saturday. He is already doing light work.

138 E. 37th St.

SOME NEW METHODS APPLIED IN RESEARCH LABORATORIES.

BY

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Many careful writers express the opinion that deaths from lung and kidney complications are more common under the antitoxin treatment and practically keep the mortality where it was before antitoxin treatment and also that a large part of the apparent improvement since the introduction of antitoxin is to be explained by improved general hygiene. The value of the antitoxic power of serum is based of course upon the least dose of toxin, which is fatal to a given weight of animal. Therefore we have to be very careful about the convenient size of the animal, and the dose of antitoxin to be injected. For instance in diphtheria the minimum dose of toxin is taken, as that which will kill 250

gm. of guinea pig in 4-5 days. This should be subjected to further trial on other animals till determined beyond doubt. The serum remains to be tested, and a unit of measurement established. This is done when it is learned how much serum will protect against the minimum fatal dose of toxin, only it is stated as ten times the amount of antitoxin which is effective against ten times the minimum fatal dose of toxin.

Investigations regarding the concentration of diphtheria antitoxin were conducted by Brieger¹, in 1893, who precipitated the antitoxic globulin by magnesium sulphate. Belfonté and Carbone² pointed out the relation of antitoxin to the serum globulin and discovered a method of precipitating globulin with ammonium sulphate. Freund and Sternberg,³ in 1899, concentrated diphtheria antitoxin by removing the albumins from the serum by means of alum. In the same year Sang and Marcus⁴ showed that the serum globulins exist in two forms, i. e., one insoluble in water or salt solution, and the other soluble. Field and Spiro⁵ investigated the globulins and determined the precipitation limit for the insoluble or euglobulin. Their work was followed by E. Pick,⁶ who pointed out that by fractional precipitation with ammonium sulphate globulin fractions of different antitoxic potency may be secured. Gibson devised a practical method for recovering the hitherto unsurmountable difficulties of isolating the antitoxic globulin on a large scale.

In the preparation of the concentrated diphtheria antitoxin the globulins are first precipitated from the serum and separated by filtration from the serum, serum albumin and other inert substances. The pseudo-globulin (containing the antitoxin)

is then separated from the non-antitoxic euglobin by means of saturated sodium chloride solution, in which the former dissolves. From this salt solution, it is reprecipitated by the addition of a small amount of acetic acid. The purified antitoxic globulin is now separated by filtration, dried between filter papers, placed in parchment dialyzers and dialyzed in running water to free it from adhering inorganic salts. When placed in dialyzers the antitoxic globulin is a white, waxy mass which gradually liquifies during the dialysis to a clear fluid. This clear fluid is passed through several layers of clear filter paper, then twice through Berkfeld filters and then standardized in the same manner as that used for standardizing antitoxin. Analysis of diphtheria antitoxin shows that its chief constituents are:

1. Serum globulin (carrying the antitoxin).
2. Serum albumin.
3. Nucleo-proteids.
4. Ferments and other proteid-like bodies.

Further analysis shows that the serum globulin carrying the antitoxin is composed of: Euglobin, insoluble in sodium chloride solution and pseudo-globulin—readily soluble in sodium chloride solution—the valuable portion, since it contains practically all the antitoxin.

The average diphtheria mortality where antitoxin was used in 1908 was 6.48%. The average diphtheria mortality where antitoxin was not used in 1908 was 32.5%, the death rate being reduced more than three-fourths by its use. In 25 of the larger cities of the United States, aggregating a population 11,362,000 this means that antitoxin has reduced the mortality of diphtheria 75%, in other words more

than 75 out of every 100 recovering from diphtheria owe their lives to the use of antitoxin.

Investigation by the N. Y. Health Department shows that the average mortality from diphtheria where antitoxin is used upon the

First day is	1.45%
Second day is	3.9 %
Third day is	5.67%
Fourth day is	7.29%
Later than fourth	14.49%

RAPID BLOOD EXAMINATION.

A blood count, to a man who does not make one several times a day or week, seems a great undertaking, and he is sure he could not find time for one, much less for several. A little practice, however, will enable the physician to do a practical blood count while the patient waits and he will frequently dismiss him much sooner than if he had tried to make the diagnosis by the history and physical examination alone. The physician should always carry with him a box of new slides and an ear lancet; a little vaccination scarificator with all the teeth but one broken off will do. On a convenient shelf in his office should be two dropping bottles, one containing Wright's or Hastings' blood stain and the other distilled water. After the ear is pricked the hemoglobin may be estimated accurately enough in a moment with the Tallquist scale, and then a thin smear should be made, preferably with the edge of another slide. This should not be held firmly, but should rest on the finger, at the proper angle to the blood slide, which is also slightly inclined. Thus the blood is spread by the weight of the slide and not by the uncertain pressure of the hand, and the specimens

are uniform in thickness and in the distribution of the leucocytes. The commonest fault is to take too large a drop of blood. The absolute alcohol in the stain will fix the smear almost immediately and the dilution with distilled water can be made. In a few minutes this active stain is washed off, the specimen is dried and it is ready for the oil. Half a minute's examination reveals a great deal to the eye that is at all accustomed to this work. It is better to use the mechanical stage so as to run across the smear, taking in both edges where the larger leucocytes concentrate and where they would otherwise be overlooked. This quick review will show the presence or absence of anemia as the erythrocytes will be either well shaped and full or pale, mal-formed, polychromatic or even nucleated. The extent and character of these changes will greatly modify the prognosis. Not all laboratory work is of practical benefit, and a large part of it is accessible only to the trained specialist in this branch. This rapid blood examination, however, is of immense value and can be done by any busy physician while he is talking to the patient on his first visit. It will prevent many mistakes and oversights.

BACTERIOLOGICAL FINDINGS IN FIFTEEN CASES OF EPIDEMIC CEREBRO-SPINAL . MENINGITIS.

The organism isolated from these fifteen cases was practically the same in all cases. As seen in the exudates obtained by lumbar puncture and at autopsy from the central nervous system, it was always in pure culture and appeared as a medium sized or fairly large biscuit-shaped diplococcus somewhat irregular in size. It sometimes occurred in tetrads and small groups. Definite chain formation was never noted.

The organism was usually found both within and outside of the polymorphonuclear leucocytes. The organism was always entirely or partially decolorized by Gram's method in the exudates. In twelve the decolorization was complete, while in five it was described as partial. In the latter cases the staining was usually quite irregular, some organisms losing their stain while other retained it. Similar results were found in the organisms from culture. Capsular staining was not systematically carried out, but in a few instances the failure to find capsules was noted. Coverslip preparations from cultures showed a medium sized biscuit-shaped diplococcus, sometimes occurring in tetrads, never in definite chains, entirely or partially negative to Gram's stain.

On culture media the organism gave the following characteristics: *Plain agar-agar*:—after 24 hours at 37°C there is a rather delicate gray, sharply defined, raised, pearly translucent thin-edged growth, which often has a slightly milky appearance in the thicker parts. The growth often takes place only along part of the streak of inoculation, and small gray, round, discrete colonies 2-5 mm. in diameter may develop the streak. A moderately delicate growth takes place in a stab culture. The addition of glucose to the agar increases the luxuriance of the growth. No gas is produced in glucose agar stab cultures. The growth extends over the surface of the glucose agar slightly. *On human blood agar*: the growth is more certain and more luxuriant than on plain agar. *On Loeffler's blood serum*: there is seen a rather abundant gray, moist raised growth.

Bouillon: this is slightly clouded and there is a small sediment, which increases in size with several days' incubation. No pellicle formation is noted. Litmus milk is not altered, although coverslip preparations of the cultures show growth to have taken place. No growth takes place as a rule in gelatin at room temperature.

MILK EXAMINATION.

The bacteriologist procures specimens of milk from delivery wagons at intervals of not longer than one month and without previous notice to the dairy.

The milk must be free from dirt, pus and injurious organisms and shall not contain more than 10,000 germs per cubic centimeter to be considered up to the required standard of purity from a bacteriological standpoint.

The chemist procures specimens and examines the milk for percentage of proteids, fat, sugar, mineral matter and water present. He also tests its chemical reaction, specific gravity and notes the presence of added coloring matter and preservatives.

Standard milk shall range from 1029 to 1034 specific gravity, be neutral or faintly acid in reaction, contain not less than $\frac{3}{5}\%$ to $\frac{4}{5}\%$ of proteids, from $\frac{4}{5}\%$ sugar and not less than $\frac{3}{5}\%$ to $\frac{4}{5}\%$ of fat. It shall not contain preservatives or any foreign coloring matter and shall not be sealed.

THE MICRO-ORGANISM OF WHOOPING COUGH.

The organism is a small, short bacillus, with rounded cells. It stains feebly and shows polar granules with carbol methylene blue. It decolorizes by Gram's method. It is non-motile, aerobic, and grows very slowly and feebly when first

isolated, and only on a special medium they devised, composed of glycerin, potato, gelatin and blood. But after several generations it will grow fairly well on other media, and does not require hemoglobin; unlike the influenza bacillus, which it somewhat resembles.

TETANUS ANTITOXIN. DIRECTIONS FOR USE IN MAN.

In the treatment of tetanus too much emphasis cannot be placed upon the early and vigorous use of tetanus antitoxin. Experience has taught that, in cases having a short period of incubation—say from five to eight days—the prognosis is extremely grave, and antitoxin to prove of service whatever, must be given in large quantities, 15,000 to 30,000 units every four to eight hours. In cases having a long period of incubation (eight to twenty-four days), in partially developed, subacute and chronic cases, tetanus antitoxin should be employed.

Reliable statistics show that the mortality from traumatic tetanus is about 80 per cent. Stanton¹ reported that as the result of Fourth of July accidents, 422 cases of tetanus developed; of these only seven are positively known to have recovered. The mortality in this report reached 98%. The only cases in which recovery was reported were those in which prophylactic treatment was resorted to at once, before the toxin of tetanus had time to permeate the nervous system.

Prompt use of tetanus antitoxin in two cases reported as recovered gave satisfactory results despite the decided symptoms of lockjaw manifested by the patients.

As a result of the discussion of the report of Dr. Stanton, the Mississippi Valley Medical Association at the annual session held in Memphis, October 7 to 9, 1903, it was resolved together with other measures corrective of the abuse of firearms, that:

(1) All wounds in which—from the environment—there is any risk of tetanus, should receive open treatment.

(2) Tetanus antitoxin should be used immediately as a prophylactic to immunize the patient if possible, and,

(3) The use of tetanus antitoxin should be continued in prompt and sufficient doses until all danger from infection of the toxin of tetanus has been eliminated.

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THE PAWLOW DOGS.

BY

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New York.

A colleague wrote to me: "We are both members of the American * * * * Association, and I am writing as a member of that Association to ask whether or not you are the author of an article entitled, 'The Scientific Torture Chamber,' which was published in the *Medical Brief* of St. Louis, about the year 1906, also whether this article was reprinted and circulated by the anti-vivisectionists with your knowledge and permission, and also what you meant by the words, 'establish a factory

¹Journal of the American Medical Association, Aug. 29, 1903.

to supply the market' with gastric juice, and upon what information this statement is based?"

I do not know the writer personally who addresses me in this remarkable way, but I shall answer him publicly. He and his Association wish to know the truth about the Pawlow Dogs, and I say *habeant sibi*.

I do not remember whether the anti-vivisectionists had asked my permission or not to reprint my article on the "Scientific Torture Chamber." As a matter of course, they did not need such permission. The title "Scientific Torture Chamber," had been given by a German medical journal, in which a paper of Dr. Stadler of Leipzig, was quoted at great length.

At a meeting of the German Medical Society of the City of New York, on November 4th, 1907, one of the physicians of the Rockefeller Institute read a paper on the Pawlow experiments and clinical observations of increased stomach secretion, and this paper was discussed. This lecture is recorded in the *N. Y. Medizinische Monatsschrift*, 1907, pp. 282-283. In giving the description of the Pawlow experiments the reader of the paper demonstrated pictures in life size of dogs showing the opening of the oesophagus and the stomach fistula and how the gastric juice is collected in a vessel attached to the dog. This paper was in fact only a repetition of a paper read before the same Society one month previously by myself, in which the Pawlow experiments were described exactly as Dr. Stadler has described them. This description has been published in many journals and books in America, first in the *Medical Brief*, December, 1906. The paper read by me in German, October 7th, 1907, before the German Medical

Society, I repeated in English before the Medical Society of the Greater City of New York, on October 21st, 1907, and both papers were published: in German, in the *N. Y. Mediz. Monatsschrift*, October, 1907; in English, in the *N. Y. Medical Journal*, November 16th, 1907; and also in the *Deutsche Med. Presse*, of Berlin, January 6th, 1908.

Prof. Pawlow's laboratory has been visited by Dr. Ed. Stadler, assistant of the Leipzig Medical Clinic. In the *Muenchener Mediz. Wochenschrift*, 1905, I, he writes in a long article as follows: "The reports on the special work done in Pawlow's Institute awoke in me the desire to learn the arrangements there from personal observation. For this reason I went to St. Petersburg last year and through Prof. Pawlow's kindness I was permitted to attend the experiments which were going on for several weeks, to witness a number of the operations and to execute some of them personally.

"All the animals used for experimental purposes are large, heavy dogs, weighing about 20 or 30 kilos. On my first visit I was surprised by the remarkable aspect of this so-called '*Factory for Natural Gastric Juice*.' In a row on a long table there were six of these dogs, imprisoned in crates. Each dog has a stomach fistula, and the oesophagus has an opening cut out at about the middle of the neck. The dogs swallow with avidity pieces of meat placed before them in basins, but the oesophagus being cut, the meat falls back into the basin, to be swallowed over and over again. Simultaneously the fistula in the stomach yields abundant quantities of an acid, limpid, gastric juice, of which these '*factory dogs*' produce three-quarters to one litre each in the course of one fore-

noon. This juice is conducted through a Chamberland filter, and now forms a regular article of commerce under the caption of 'Natural Gastric Juice' ('kommt als natürlicher Magensaft in den Handel')."

This is the exact description Dr. Stadler gives of Pawlow's *Factory*, as he calls it, and as he says it is called.

ETIOLOGY AND DIAGNOSIS.

Occupation as a Factor in the Etiology of Tuberculosis.¹—All indoor occupations and particularly such as expose the individual to the constant inhalation of irritating dust (tailoring, weaving, stone-cutting, etc.) are particularly prone to render an individual susceptible to the invasion of the tubercle bacilli. The enactment and enforcement of proper workshop and factory laws, education of employer and employee as to proper ventilation and proper precautionary measures to limit the danger of contracting occupation-diseases, are the remedies for overcoming these predisposing factors.

Child-labor or overwork on the part of adult men and women are factors which must be enumerated as strongly predisposing to tuberculosis. They undermine the system and render its germicidal and phagocytic powers *nil*. The remedies are abolition of child-labor in all its forms and reasonable labor laws which make the conditions rendering the honest laborer liable to disease by overwork impossible.

Venereal diseases can only be prevented by education, repressive and wise humanitarian efforts, but not oppressively. The same, I believe, can be said of alcoholism. But of alcoholism it must be said that, while it often causes poverty and want, bad housing and underfeeding, it is not infrequently the result of poverty and want, lack of air, and insufficient food.

TREATMENT.

The Treatment of Hemoptysis.¹

1. While there may be other elements in the production of hemoptysis, it is evident that blood-pressure in the pulmonary area plays an important part.

2. Estimation of blood-pressure in the pulmonary area cannot ordinarily be made experimentally.

3. Clinical observation, however, goes to show that there is a relation between pulmonary pressure and systemic pressure.

4. Such preparations as nitroglycerin are capable of reducing blood-pressure in the vascular system, and by their use it would seem to be possible to keep the pressure in the pulmonary area in any particular case reasonably below the danger point.

5. The drug should be administered in small doses, and may be continued over long periods.

6. The results obtained here have been the result of the study of over six hundred cases of pulmonary tuberculosis in residence, and the treatment as carried out for nearly two years has given time to prove the efficiency of the same.

7. It would seem to be indicated that this drug should be administered in the morning some time before the hour of rising, and subsequently at, say, 7:30 a. m., 11:30 a. m., 4:30 p. m., and 7:30 p. m., in order to have the result produced before the blood-pressure is raised by the exertion incident to toilet, meals, etc.

8. When 1-100 grain of nitroglycerin will reduce the blood-pressure 15 mm. in less than ten minutes, the same dose, given four times a day for, say, two weeks, should be sufficient to maintain a lower pressure than the individual's normal.

9. While the administration of nitroglycerin has not proven to be an absolute preventive, still, in the large majority of cases, with a previous history of hemoptysis, or the occurrence of the same while in residence here, it has been clearly proven to be efficacious in reducing the frequency of the complication and in lessening the amount of blood lost when it does occur.

¹S. A. Knopf, M. D., *Am. Jour. of Clinical Med.*, June, 1910.

¹F. S. Minns, M. B., Toronto, *Am. Jour. of Clin. Med.*, June, 1910.

The Treatment of Pulmonary Tuberculosis.¹

1. Empty the digestive tract. Blue mass and soda, gr. 1-2; podophyllin, gr. 1-6; iridin, gr. 1-6, every thirty minutes for three hours in the evening. The next morning give a copious saline laxative draught. Repeat the procedure every night for nine days. Every second night flush the colon with warm decinormal salt solution, having it retained as long as possible. Give a light laxative on evenings when the mercurial is not taken.

2. To keep the intestines free from inimical bacteria and inhibit fermentation: The sulphocarbolates of sodium or of calcium, or both, with pancreatin and a bile salt one hour after food.

3. To increase the output of urea, and of body waste generally boldine and iridin or stillingin before meals are indicated.

4. To increase the appetite and improve assimilation: Add juglandin, strychnine arsenate, nux vomica (or quinine) to the "before-meal" dose.

5. To increase resistance (leukocytosis) and render the system generally inimical to bacteria: Nuclein with guaiacol, calcium, and iodine. I have for some time been experimenting with various combinations of these drugs and find this formula to produce definite results, in eight out of ten cases; Nuclein, gtt. 10; guaiacol carbonate, gr. 1; calx iodata, gr. 1-2. One or two such doses may be given every three or four hours. More massive doses of nuclein are given hypodermically or intravenously. (Ward's method).

6. To assist in the elimination of the solids and to flush the kidneys: Arbutin, barosmin, asparagin, or other indicated diuretics are the remedies, aided by thin barley water. Lithium or ammonium benzoate may be called for if hyperacidity or alkalinity of the urine obtains.

7. To secure normal excretion of waste through the skin: Employ sponge-baths of magnesium-sulphate solution (carbolated). The usual proportions are: magnesium sulphate, oz. 1; carboic acid, gtt. 20; water at 100° F., 2 quarts. Repeat the sponging each night, following with brisk

friction with rough towel.

8. To maintain cleanliness of the upper respiratory orifices. Gargle thoroughly and douche the nares with an effective alkaline antiseptic; then spray the nares with camphor and menthol in petrolatum. Eucalyptol may be added with advantage, or oil of cinnamon.

9. To destroy surface bacteria and to stimulate the mucosa of the bronchi. For this order inhalations of formalin vapor and steam bearing volatilized oils (turpentine, cinnamon, eucalyptus).

The phthisical patient treated along lines as here outlined *must* improve, for the simple reason that the pathologic conditions present are intelligently—and effectively—met.

If the diseased individual be placed upon a correct diet, spends most of his time in the sun and open air (properly protected), exercises or rests as his condition may demand, and thinks hopeful thoughts, he is doing about all he can do to get close to natural conditions.

The Treatment of Chronic Gonorrhea.¹

—According to W. J. Robinson, chronic gonorrheal urethritis is certainly one of the most tedious and sometimes one of the most thankless affections which we are called upon to treat. This statement will be readily corroborated by every specialist who has a large practice and who is not satisfied to consider a gonorrhea cured because the discharge has ceased.

Before entering upon the treatment a word should be said about over-treatment of chronic gonorrheal urethritis. It is almost a daily occurrence with us to see patients whose only trouble is over-treatment by their physicians or themselves. The urethra is a tender organ and it will not stand constant dilations, injections, irrigations, etc., without replying to the insults with a catarrhal irritation. When a patient presents himself, in whom after examination and the history suspect the chief or only trouble to be over-instrumentation, give him just a mild urinary antiseptic internally (generally a combination of urotropin and arbutin) and tell him to come

¹Geo. H. Candler, M. D., Chicago, *Am. Jour. of Clinical Med.*, June, 1910.

¹W. J. Robinson, M. D., Critic and Guide, April, 1910.

back in two or three weeks. And at the end of that period such patients are generally either entirely well or practically so. This prefatory remark is very important. If a doctor has a case which seems to resist the most *energetic* treatment, let him cease all treatment for two or three weeks, and he may be surprised at the result.

Tedious and long as the treatment of chronic urethritis is, it is quite simple. It may be expressed in three words: Irrigation, instillation, dilation. The drug par excellence in chronic urethritis is silver nitrate, with protargol as second choice, or as alternate. And with this drug alone, properly used, we can cure all or practically all our cases. For irrigation I use it in the strength of 1 to 10,000, increasing gradually to 1 in 1,000. By increasing the strength very gradually, we avoid irritation with the consequent discharge, strangury, etc. The amount used per irrigation differs from 8 to 32 ounces (250 to 1000 Cc.). This irrigation is repeated twice a week, as a rule, but never more than three times. In some cases once a week suffices. The entire urethra is irrigated, for while in the acute disease we distinguish between anterior and posterior urethritis, there is practically no line of demarcation in the chronic variety. The entire canal is more or less affected. If the neck of the bladder also shows signs of implication in the gonorrheal process, the bladder is also irrigated. The "instruments" used are a Mitchell return catheter and a 4 to 8-ounce hand syringe. But lately I have done away with the catheter almost entirely and find I can accomplish everything that is needed with the syringe alone. My principle is to go with an instrument into the urethra, be that instrument even nothing more than a soft catheter, only when we cannot avoid doing so. By closing the meatus firmly over the soft rubber tip of the syringe and by applying pressure in the perineum, we can dilate the urethra to its utmost capacity so that the fluid reaches every fold, every opening, every follicle.

When endoscopic examination shows the presence of localized patches of inflammation or erosion, then topical applications, applications to the spot, are indicated. The applications may be made by the aid of a

cotton carrier or by instillation with a Guyon syringe. The strength of the silver nitrate solution should be from one to two per cent, but may be as high as three per cent. If protargol is used the strength should range from 5 to 10 per cent.

What the exact rationale is of treatment by sounds is not well known, but there is no question that sounds and dilators—if not abused—have a remarkably beneficial effect on the course of chronic urethritides—gonorrhea, gleet and simple catarrh. But I do not believe that the effect can amount to much if we leave the sound a minute or two, as some advise. I leave the sound in from fifteen minutes to half an hour; the effect on the muscular structures is such that you will often be able to pass a 20 or 28, when you cannot pass a 20 or 22 F.

While I mentioned sounds and dilators after irrigation, as a matter of fact in actual practice we first pass the sound or dilator and then irrigate. If you should attempt to irrigate first with silver nitrate, you would find that in many cases you would have great difficulty in passing the sound on account of the astringent action of the silver solution. The correct order is:

- (1). The patient urinates.
- (2). The urethra is washed out with a warm boric acid solution (2 per cent) or a 1 to 10,000 mercury oxycyanide solution.
- (3). The sound properly aseptitized and lubricated, (with a water-soluble and not an oily lubricant) or the dilator, is passed and allowed to remain the proper length of time (see above).
- (4). The urethra is again washed out with a warm boric acid solution.
- (5). The injection, irrigation or instillation proper is now used.

Such a treatment gives results; definite and positive results. And we, personally, do not believe that there is such a thing as an incurable case of gonorrhea or urethritis.

The Injection Treatment of Hemorrhoids.¹—Dawson describes his technique as follows: The injection treatment is confined to uncomplicated internal piles, which can be returned to the bowel should they prolapse.

¹J. Bernard Dawson, *The Antiseptic*, Feb., 1910.

It requires no anesthetic.
It causes little or no pain.
There is no risk of life.

It does not necessitate confinement to bed.

The solution used with most satisfaction is a solution of carbolic acid in equal parts of glycerin or water to produce a solution of from 10% to 5%.

The piles are made to prolapse either by the finger or by the administration of an enema.

A hypodermic syringe fitted with a needle of good lumen is used. Into each pile 2 to 5 minims of the solution is injected. The piles are well anointed with vaseline and returned to the bowel. The patient is instructed that the piles must upon no account be allowed to prolapse, and replacement must be effected at once should they do so.

The immediate result is a rapid swelling. The effect of the method is to produce inflammatory thrombosis and fibrosis which ultimately subsides, so that the piles shrink and disappear. The patient should be kept in a state of constipation for forty-eight hours, after which the bowels should be relieved by castor oil or a saline aperient.

Throughout the course of treatment a 2% ointment of ferrous sulphate should be frequently and freely applied to the pile area, while the following mixture is taken three times a day:

Ferrous sulphate 3 grains.
Magn. Sulph. 25 grains.
Acid sulph, dil. 10 minims.
Inf. quassia, add 1 drachm.

Treatment of Facial Neuralgia.¹—

Alexander advises the following plan of treatment in facial neuralgia: In recent attacks active cathartics are given, diaphoresis is induced, and salicylates are administered, the patient being kept in bed and on restricted diet. If improvement does not follow in the course of a few days, the sweating process is repeated, and local heat is applied, as also, possibly, galvanization with the anode. If after six or eight days there is no improvement, aconitine is prescribed, in doses of 1-5 milligram (1-335

grain), together with a moderate dose of a laxative remedy. If this is ineffectual, arsenical treatment is indicated, together with injections after Schleich or Lange, or injections of eucaïne solution. In case of persistent failure the affected branch of the trigeminus must be destroyed by injections of 80-per cent alcohol.

THERAPEUTIC NOTES.

Syphilis and the Iodides.¹—One of the greatest errors made in treating syphilis is in the use of the iodides. We are taught that they are not needed in the secondary stage. This is true only when the secondaries are extremely mild and evanescent and respond rapidly to the mercurial. Any secondary that resists ordinary medication, or shows ulceration or such secondaries as headache, periostitis, myositis, neuralgia, etc., call for the prompt administration of the iodides and *in increasing doses*. Sodium iodide seems to be borne by the stomach better than the potassium salts, and for that reason seems preferable. The usual dosage is ten drops of a saturated solution, to be increased 5 drops a dose until 60 drops t. i. d. is reached, when the patient drops back to 10 and increases 5 drops a dose again. Of course, while giving the iodides, attention must be paid to overdosing, though the coryza, if it is produced by a small dose, will often disappear on increasing the dose.

While the patient is taking iodides, a nasal spray of camphor and menthol aa grs. viii, carbolic acid grs. iii in albolene oz. i adds greatly to the comfort of the patient. In those cases where iodides cause great gastric disturbance the administration of the drug may be brought about by using salol-coated capsules or rectal injections.

When to take Medicine.—Alkalies, iodine and the iodides, according to the *Medical Summary*, are better given when the stomach is empty and they diffuse more rapidly into the blood. If given

¹A. V. Alexander, M. D., Berlin. *Klin Wochens.* No. L, 1909.

¹W. S. Horn, M. D., U. S. Navy, *New England Medical Monthly*. June, 1910.

during digestion the acids and starch alter and weaken the process. When it is desired to give acids they will be found to be more readily diffused into the blood between the digestive acts. Acidity of the stomach or an excess of gastric juices are remedied by taking acid before meals. Irritating and powerful drugs should be given directly after food. Among this class we may mention the salts of arsenic, copper, zinc, and iron, except where local conditions require their administration in small doses before meals. Silver preparations should be given after the process of digestion is ended; if given during digestion chemical reactions destroy or impair their special attributes and defeat the object for which they were prescribed. Alcohol, tannin and metallic salts, especially corrosive sublimate, disturb digestion and should therefore be administered during its greatest period of inactivity. Malt extracts, cod-liver oil, phosphates, etc., should be given with or immediately after food so that they may enter the blood with the products of digestion.

Ether in Cocaine Poisoning.¹—Engstadt says that he has had considerable experience with cases of cocaine poisoning, occurring largely in the hands of dentists. In the first few cases he was called on to treat, strychnine and morphine were used in combination with marked benefit. As cases kept multiplying, however, he found the action of these drugs too slow, and it was necessary to find something that would counteract the poison more rapidly when life was in danger. He found this drug in ether administered as ordinarily to produce surgical narcosis. While cocaine inhibits the action of the heart, especially on the right side, and affects also the superior respiratory centers, ether properly given has the opposite effect, and has saved what seemed to him hopeless cases. To get the best results it is administered only to the degree of mild surgical narcosis, or even less. Given by the old way it would do harm. A mask should be employed, and the ether given by the drop method. This he thinks is all important. It occurs to him that this fact will be of use to others and,

just at present since there is so much interest in the work of Jonnesco with stovain, which has a similar effect to that of cocaine, he offers the suggestion of ether as an antidote to this drug also.

Removing Medicine Stains.¹—Stains of iodine are easily removed from the hands and linen by moistening them with ammonia or a solution of hyposulphite of soda.

Nitrate of silver stains are rapidly effaced by a solution of cyanide of potassium or of iodide of potassium. The yellow stains resulting disappear completely with hyposulphite.

Chrysarobin stain may be treated with chloroform or proof spirit, while that of resorcin is removed by a solution of citric acid.

Picric acid is amenable to a solution of sulphite of potassium, applied for about one minute, followed by washing the parts with soap and water.

The stains of pyrogallic acid seem to be refractory to all chemicals.

HYGIENE AND DIETETICS.

Nourishment in Acute Diseases.—According to Haworth it is quite a common experience to find a patient out of bed for the first time not more than a quarter of an hour, quite depressed and sometimes in tears because of the unexpected weakness, and this after a great deal more nutriment has been taken than is customary when in normal health. This apparently shows that physiologically we do not draw our strength from our food. Surely all of it goes to make good the loss of tissue which is always going on in the economy. Dead tissue is constantly being thrown off and new cells are born and go to make good this loss. Hence comes the popular saying that "we have a new body every seven years." Of what avail, then, is all the nutriment we take? Practically none, says Haworth, except to build up the burnt-out tissues the result of an attack of, say, pneumonia. But with a temperature of

¹J. E. Engstadt, M. D., Grand Forks, N. D., Jour. A. M. A., March 19, 1910.

¹The Medical Press.

104°, a furred, foul tongue, and pronounced anorexia, loading up the bowels with accumulated waste, and innumerable organisms of infinite variety and infection, it is better to wait for convalescence, with its rested and recuperated stomach, cleared out bowel, and a mind free from the terrors of delirium. Watch the pulse and improve this by increasing the blood pressure by means of copious draughts of hot water or saline injections by the rectum, or by both, and we shall not need to fear collapse or heart failure.

The Artificial Feeding of Infants.¹—

Great difference of opinion exists, says Amsden, upon the subject of artificial feeding of infants.

In this country cow's milk is the universal substitute for human milk when artificial feeding is necessary. The percentage method is most widely adopted and is based on the assumption that the proteid constituents of milk are the cause of difficulties in digestion. Certain objections to this method: It is complicated and no two authorities give the same formulæ. Amount to be given calculated arbitrarily according to child's age, instead of ascertaining ratio between caloric of food and weight of child. Principal objection is assumption of indigestibility of proteids as chief cause of difficulty in digestion, based on analysis of curds in stools and laboratory tests. Clinical experience proves fats rather than proteids to be the cause of indigestion and curd formation. Walls and Brennerman show that skim milk is more easily digested, causes no colic, and stools are free from curds. Method of feeding which they advocate is based on caloric value of milk and its adaptation to the needs of the child, based on its weight rather than age. Writer's personal experience confirms observation of these writers, and tends to prove that use of clean whole milk of low fat percentage, diluted with water or cereal gruel, will give better results than milk modification according to percentage method.

¹H. H. Amsden, M. D., Concord, N. H., *New England Medical Monthly*, June, 1910.

GENERAL TOPICS.

The Pathology of Mummies.¹—In the manner of children with toys the ancient Egyptians went through a process of make-believe with their dead. Well acquainted as they were with the rapid putrefactive processes of a hot climate, they thought to frustrate these by embalming corpses so as to resist decay and to retain perhaps forever, some semblance of their habits as they lived. Whatever its later developments, the pathetic original theory evidently was that the dead only slept, and if their bodies could be kept intact they would at some time or other awake and resume the ordinary business of life. Hence, of course, the fact that the dead were often buried in mortuary chambers with furniture and utensils about them. It has been left to Europeans, some 8,000 years and more after the date of the eighteenth to twentieth dynasties, to make the melancholy discovery that the Egyptians buried many things with those whom they loved, for which the latter had no sort of use in a second life. Had they known, for instance, what they were about, they would certainly not have been at pains to ensure the perpetuation of diseases in the mummies under their care. Still more, they would have refused a factitious eternity to parasitic life or bacteria. One is almost glad that the old pious Egyptians are not able to see the unrolling of their friends, for their feelings might be hurt by our discovery of pathological conditions probably never suspected or understood by them. Writing in the *Cairo Scientific Journal* for January, 1910, Dr. M. Armand Ruffer has given an interesting account of his examination of a number of mummies of the period of the eighteenth, nineteenth, and twentieth dynasties, now in the Hearst collection in the Museum of the School of Medicine at Cairo. From this microscopic examination it would appear that the ancient Egyptians exhibited a variety of grave pathological phenomena. Arterial disease was of "frequent occurrence, and, indeed, temporal arteries of mummies in various museums are as tortuous as they are at the present day, even in people who died when comparatively young." Lung disease was common. "The lungs of one mummy

¹London Lancet, April 30, 1910.

(twentieth dynasty) present all the signs of diffuse anthracosis," being choked with soot, as though in life they had been in smoke-laden air. "Numerous micrococci are packed in an alveolus" of another set of lungs, and Dr. Ruffer does not hesitate to diagnose pneumonia, "which had advanced to the stage of hepatisation." In the tissues of the liver and the blood-vessels of the same mummy large numbers of bacilli were also found. "These bacilli stain well with hæmatoxylin, methylene blue, fuchsin, but not with Gram's method. . . . It is clear that micro-organisms retain their characters unaltered in mummified tissue." These particular ones were ovoid in form and "about the size of plague bacilli though plumper." In other mummies renal lesions were found, which took the form, in one case, of multiple abscesses, full again of bacilli resembling bacillus coli. All these micro-organisms were dead and incapable of doing harm. In examining a renal calculus of Dynasty II. Mr. Shattock, the pathological curator of the Museum of the Royal College of Surgeons, found in a closed central cavity a mass of mould conidia in so good a state of microscopic preservation that he unsuccessfully attempted to raise a growth from them—they were dead. Were the bacilli of mummies capable of spreading disease among the living, who shall say what results might not follow?

Medical Students in United States.—

According to *The Journal of the American Medical Association* there were 22,145 students pursuing medical studies in this country last year. Of these 20,554 were in attendance at regular schools, 899 at homeopathic, 413 at eclectic, 52 at physio-medical, and 227 at unclassified colleges, respectively. A year ago there were 4,442 graduates in medicine. There has been a slight decrease within the last few years in the number both of students and graduates.

According to statistics submitted at the last meeting of the Council on Medical Education there are 160 medical schools in this country, as compared with 172 in all the rest of the world. In Germany there

are 20 medical schools; in France 5; in England 21; in Scotland 8; in Austria 7; in Russia 10; in Spain 9; in Mexico 1; in Argentine 2; in Brazil 3. We certainly have our share!

There is the same disparity in the number of physicians. In Europe the average is probably one physician to 1,500 or 2,000 people. In the United States there is one to 656, according to the figures of the Carnegie Foundation, though others make the professional congestion even greater. It should be recalled, however, that this country is the richest in the world. The average income is higher than anywhere else. The people are much more able to employ the medical man than in the old world, so resort to him much more frequently. In spite of the large number of physicians the position of the medical man in America is far above that of his brother in Europe.

New Pure Food Catsup.—Wesener, (*Illinois Med. Jour.*) sums up his paper as follows:

1. Sodium benzoate and benzoic acid are medicinally less active than the other substances used in the preservation of food, and the benzoate is less active than the preservatives now used in making the pure food catsup, which it has been stated may be made without the use of chemicals.

2. By the use of sodium benzoate and benzoic acid, the flavor of the article preserved is not lost nor can any inferiority of the product be disguised.

3. The flavor produced by vinegar and spices is wholly artificial and does not retain much of the natural flavor of the product that is preserved. By this means it is easy to cover up inferiority and thereby deceive the consumer.

4. Changed conditions in economics have made it imperative for the manufacturer to prepare his food to reach the consumer in a sweet, wholesome and palatable state.

5. Sodium benzoate and benzoic acid for catsup do this far better and in a less injurious manner than the products that are now used and so extensively advertised in the manufacture of pure food catsup.

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Opposition to a national department of health from any one who does not have some selfish interest liable to be restricted or regulated by the proposed plans is quite incomprehensible. The alignment of the patent medicine men and allied interests against the project is only too significant. An effective department would assuredly curb those whose activities conflict in any way with the welfare of the people, but those who are engaged in honest enterprises will find only new and enlarged opportunities. For instance, few of the honorable, open, above board pharmaceutical manufacturers of the country are opposing the plan for a national department of health. On the contrary, the great majority are strongly in favor of the proposition. It is well for the medical profession to take cognizance of this fact, for of late there has been an unfortunate tendency to place all pharmaceutical manufacturers, patent medicine makers, and quack remedy vendors in a class together. The attitude taken on this question of a national department of health by the clean, honest firms who are keeping good faith with the profession, tells its own story, while at the same time a very natural suspicion is created concerning those firms who are striving to defeat the project.

It can be readily understood that honest differences of opinion will arise as to the

way in which a national department of health should be organized, the scope of its activities, methods of procedure and so on. Such differences of opinion are not only natural, but entirely wholesome in that they indicate a thoughtful interest. But it is the opposition to the fundamental idea of marshalling and utilizing the obvious resources of the government for the promotion of the public health that we cannot understand. Most any sane man will agree that the more the utilities and resources of a government are used for the common welfare, the closer that government comes to fulfilling its mission. With the splendid opportunities that have been opened up for governmental activity by the development of modern hygiene and sanitation, it would seem that every day is wantonly wasted that fails to see every resource, force and energy of our national government focussed on the two most important economic questions of the hour,—the prevention of disease and the prolongation of life.

The fallacious argument promulgated by the "National League for Medical Freedom" against the proposed national department of health is not apt to deceive for long any but those who wish to be deceived. The claims that the Owen bill aimed to create a medical trust, to establish a schedule of medical fees, to give all

offices to "allopathic" physicians, and to drive all practitioners except the "allopaths" out of business, are as ridiculous as they are baseless. If the author of such claims did not know they were absolutely and unqualifiedly untrue, he deserves nothing but pity. The American Medical Association is attacked especially and here again erroneous statements are made. Never has the association attempted to regulate fees for the practice of medicine. To the contrary the subject has been left severely alone and nothing in the constitution and by-laws can be properly construed as referring to the subject. During the past decade the American Medical Association has grown substantially. It has placed the medical profession on an organized basis and served to give the physicians of the United States a broader and more comprehensive view of their duties to the public and to themselves. It has created and fostered a broader interest in medical affairs in general. It has attempted to break down the bigotry and narrowness of sectarian medicine, and opened its membership to every qualified physician who would renounce the claim of practicing under any special "school" or "pathy." It has worked for uniform and stringent laws regulating the practice of medicine. It has zealously worked to elevate the standards of medical education. It has worked for and supported pure food and drug laws. In fact, the American Medical Association, including in its membership the leading physicians of America has been constantly arrayed on the side of every law or movement that tended to improve medical efficiency and promote the welfare and health needs of the people. If it has been a medical trust, it has been a trust well fulfilled.

To deny that mistakes have been made would be foolish. The affairs of the association have been directed by a few men—too few perhaps—who have been as open to human errors as are all other men. In their efforts at reform, their zeal and earnestness have sometimes warped their judgment and led them to make the ages old mistake of misinterpreting the motives of those who dared to disagree with them. In their effort to ferret out and correct abuses occasional—perhaps frequent—injustice has been done. Several instances have been brought to our attention in which grave accusations and charges have been wrongfully made—to the best of our knowledge and belief. But we are not prepared to call such errors or mistakes—if such they prove to be—wilful and meretricious. They are the errors and mistakes of individuals who are no less infallible than other men. We and other men, can therefore attempt to refute such mistakes, but no refutation is ever strengthened by unsupported charges of "graft," "crookedness" and "dishonesty." Questions of fact and opinion call for evidence and the issue necessarily depends on the burden of proof *pro* or *con*. Then again, without a doubt some of those who have been honored and trusted by election to prominent offices in the association have used their positions to advance their personal interests. Men unfortunately have been doing this since the most primitive organization. But the point we wish to make is that in their ultimate analysis none of these things has reflected on the association itself, or its fundamental objects—however much they may have reflected on certain men and their motives. No, the association has too great a destiny and too large a purpose to be held back by the

machinations of any group of men of any period. The American Medical Association is a strong, purposeful institution, a force for unlimited good in the progress of the American nation.

The American Medical Association needs no defense. Let no one interpret our remarks as an effort in such a direction. A great deal of criticism both from within and without the profession has been directed against the association. To us this seems wrong for we believe that the association, its fundamental principles and all that it stands for are unimpeachable. If those directing its immediate affairs and policies, do wrong or make mistakes, let us direct our criticisms against them. Let us who are members voice our opinions in no half hearted way, and if the necessity arises, use every effort to correct any existing wrong. But let us be sure that wrong actually exists, that we ourselves are right. Moreover, let us not make the grave error of condemning the whole for a part, or lose sight of the worth and nobility of the association itself, because of differing with the ideas or acts of any of its officials.

In plain language, the man who from pique, dissatisfaction or difference of opinion, turns on the association and attacks it, is stultifying himself and falling far short of his obligations either as a member or as a man of honor. Likewise, to deny the good that has been accomplished and the success that has been attained, just because this official or that group of officials have made mistakes or gone contrary to our opinions is a confession of smallness that no man of even ordinary calibre would care to make.

It has been a source of genuine satisfaction that the particularly virile attack

of a prominent Chicago member has been directed exclusively against individual officials. Whatever opinion one may hold as to the propriety, wisdom or justice of the attack referred to, it is gratifying that the member in question has been one of the staunchest supporters of the association. Indeed, there is every reason to believe that his sentiments toward this great association of American physicians are no different from our own.

To us there is no institution in the country that we esteem more highly than the American Medical Association, both for the splendid work it has done and for its possibilities. We are glad and proud to commend every force or factor that has been useful in placing it where it is and in enabling it to accomplish what it has. And while we may honestly feel that different methods might have produced larger results, and that needless harm has been done, we have sense enough to realize that having opinions and actually working them out are two vastly different things. One cannot look over what has actually been done therefore and comprehend the present status of the association without exulting. Such success is good, it is inspiring, and after all is said and done, it makes one feel that right, and right alone is going to prevail.

The people will soon realize the truth. They will see that the forces behind the "League for Medical Freedom" are not as lily white and free from ulterior motives as those exploiting it would like to convey. Unquestionably many have been attracted to this organization in good faith and with no other object than to further the principle of medical freedom. When such people realize that the great bulk of the reg-

ular medical profession are heart and soul with the broadest possible freedom of medical thought, teaching and practice, and awaken to the unselfish, self-sacrificing work of the men who are bending every energy to what seems to them the *summum bonum* of present day living—the prevention of disease, it is entirely probable that any reason for the “League for Medical Freedom” will cease to exist.

In the meantime, it is a shame, a miserable shame, that work such as the medical profession have so long been doing, also the clean disinterested efforts of such men as Professor Irving Fisher and his colleagues on the Committee of One Hundred, and finally the wholesome educational work of the American Medical Association should be forced to make any defense against such an unjust and unwarranted attack as that of the “League for Medical Freedom.” If such an organization wishes to promote freedom of thought or belief in medicine all well and good. Surely the regular medical profession are not disposed to oppose such teaching, for it is in line with the doctrine of every regular physician. He favors it, teaches it, practices it. It is his sectarian colleagues who stand in the way of such medical freedom, and yet so far as can be learned the “League for Medical Freedom” numbers few but sectarian practitioners in its membership. Truly, it is an anomalous situation. One cannot help but wonder just how far an organization pledged to the propagation of medical freedom can go with so many members whose very existence depends on their adherence to medical sectarianism—the antithesis of medical freedom. It begins to look as though Mr. B. O. Flower let his zeal for members overreach his sense of fitness when he started

out to preach medical freedom with such a choice assortment of ‘medical slaves’—osteopaths, Christian Scientists and the like.

Allopathy is a misnomer for to-day there is no such school, nor are there any physicians who care to be dubbed “allopaths.” Long ago it was recognized that it was contrary to the spirit of medical science to claim adherence to any particular “school” of medicine, or to follow any restricted line of medical practice. The broad, liberal practitioner of medicine realized that his practical usefulness depended on his freedom to use any and all means at his command in combatting disease, no matter what their source or derivation. True science knows no limitations and the instant that medical practice is denied absolute freedom it becomes inethical and irregular. Hence, the physician who admitted no restriction of his methods of treating disease, but claimed the absolute right of using anything or everything that would accomplish desired results in the best possible way, saw that his attitude was the only right or ethical one and henceforth he called himself and his colleagues of like belief and practice, regular.

Few liberal minded people will deny the correctness of this classification of medical practitioners into regular and irregular. The regular physician uses everything that serves his purpose and enables him to accomplish definite results. In other words, he is more interested in the ends than in the means. The irregular practitioner follows one line of practice to which he limits his methods—or at least professes to. He denies good in any other method than his own—ostensibly. But the feature to be deprecated principally in sectarian

medicine is that to-day it is seldom honest. Take homeopathy for instance. When practiced faithfully, no matter how much one may disagree with its teachings, it deserves respect because it embodies certain definite principles which can be honestly followed. But as a matter of fact, it is the exception to find a self styled homeopathic practitioner who limits his methods to the doctrines of Hahnemann. All but a very few use as extensive an armamentarium as the physician who makes no sectarian claims. To claim, therefore to be a homeopath under such conditions is hardly honest, to say the least. The eclectic school have never laid as much stress on sectarianism as the homeopaths and they have adhered much more closely to their teachings. Consequently they are far less open to the criticism of hypocrisy than the great majority of the homeopaths.

Sectarianism in medicine is passing away. It must be highly objectionable to the honorable homeopathic physicians of America when they realize their anomalous position. They know and a great many intelligent laymen know that homeopathy *per se* constitutes a small part of their practice. Therefore why should they perpetuate sectarianism? It entails no sacrifice of principle or privilege to renounce sectarianism and join the ranks of the regular profession—the school, if one chooses to call it such, whose two main requirements are (first) a broad, well grounded equipment in the fundamentals of medical education, anatomy, physiology, chemistry, pathology and allied subjects—and (second) the broadest possible knowledge of every means effective in preventing, controlling and overcoming disease.

What a physician uses or how in any or all his cases is entirely a matter of individual judgment and decision.

Medical science has made wonderful strides in the past decade, and there are apparently no limits to the possibilities of controlling the diseases that afflict mankind. The humanitarian character of medical practice creates a common brotherhood between those who devote their life to medicine that is enjoyed by almost no other calling. It would seem that this brotherhood should bring all practitioners of medicine closer together and lead us as earnest workers in an honorable, noble cause to pool our efforts for the common good. The differences between educated physicians no matter what their "school," is too small to warrant the continuance of the sectarian idea. The future work of medical men in ridding humanity of preventable diseases calls for a united profession. All that is needed for the practical achievement of a professional unity that will bring all that every earnest physician hopes for, is the obliteration for all time of medical sectarianism. The homeopathic and eclectic physicians of America number too many clean, capable men to make it conceivable that they will long continue the almost obsolete claims of "school" or "pathy" which actually mean so little but which interfere so definitely with medical solidarity and progress.

The waste of city water is a matter closely connected with health, yet one upon which not much is accurately known. Though the vast majority of mankind get along with very little, it seems to be an accepted axiom of civilized sanitation that with higher races water must be supplied

so abundantly that no one need stint himself and we can afford to waste some. Such opinions must be revised now that it is becoming increasingly difficult to supply congested populations. The time is coming when it will be necessary to dole it out and charge for the amount used, so that it will soon be necessary to determine how much per capita is needed for health. City supplies vary so enormously that no reliable information is obtained from them. Where there are occasional wells or creeks for some purposes, as little as ten gallons per capita daily are used from public mains, but in other places where sole dependence is upon the city supply and industrial establishments must be furnished with water, the consumption runs up to 175 or even 200 gallons. It does seem that much is wasted and that public health will not suffer should the amounts in larger cities be very much restricted by the installation of water meters which permit taxation according to the amount supplied. It is a question as to whether the cost of unlimited water privilege is not prohibitive and whether the present system will not eventuate in a restriction for all to an amount below the line of safety. The urgent necessity for a daily washing of city streets in appropriate weather, is bound to be recognized in time and this will still further deplete the supplies, so that a double system may become necessary as we have previously remarked. Then the amount of potable water needed per capita will have to be limited, but so far no one can say what the minimum should be. Surely each human being needs more than ten gallons daily for household purposes alone, and far less than 100 gallons, but the proper amount remains to be determined.

The commercialism of optometry is the inevitable result of the recent law legalizing the medical practice of "business" men. The new *Keystone Journal of Optometry* openly states that one of its purposes is the exploitation of the commercial side and it seems to cater to opticians instead of oculists. There seems to be little dissent from the growing opinion that the law was a grave blunder inimical to public health. It is certainly a step backward in the present crusade for a better education of all practitioners in their specialities. Now that the dental and pharmaceutical professions have succeeded in establishing courses of study something more than elementary in medical branches, it is disheartening that the public will permit this new departure in a specialty needing more medical knowledge than a capable dentist possesses. To refract eyes properly, one needs to know all the things which cause poor sight, and not merely some mathematics. We strongly suggest the organization of special courses, at least as extensive as for dental students, somewhat on the plan of those proposed for public health officers and sanitary inspectors. There is no doubt that a man may become a safe refractionist even if he has devoted no time to the thousand and one things demanded of students designing to specialize in surgery, but the mere optician knows nothing at all except "business." We have always approved commercialism in its place, for therapy is immensely indebted to the commercial houses which have developed new remedies, but these men do not presume to practice. Optometry is commercialism out of place. After ignorance has ruined some man's vision, perhaps public opinion will revise itself and the law too.

Special licenses for Roentgen Ray operators have been suggested more than once, but mostly with a view of preventing the burns from the unskillful application of large doses. It has been brought up again, on account of the cruel deaths of so many skilled operators, who have thus shown that even they did not realize the profound results they were unconsciously producing. It is said that there is an opposite danger of stimulating new growths of greater malignancy instead of destroying them if the dosage is too small. The late appearing nervous symptoms and kidney and blood changes due to the influence of long continued weak doses in adults, and the profound influence of short applications upon children, have opened our eyes to the more subtle effects, and have proved that there was not enough animal experimentation when we rushed in with this new mysterious agent. The special courses now demanded in medical colleges may be made the basis for the required x-ray licenses to physicians intending to specialize, and may also be arranged for students who may be excused from many things demanded of those who are to take up more general practice.

The constant increase of crime that statistical data show so conclusively, constitutes one of the gravest questions confronting modern society. Year after year communities have been enlarging their facilities for culling out the criminal. Theoretically, as quickly and effectively as possible every individual who has violated the established moral or social code has been sequestered for two main reasons, *first* for the protection of the public, and *second* for punitive and exemplary purposes. Practically, laxity in enforcing

penal laws, an enormous increase in the technicalities of legal procedure, and the undue weight given to complications arising therefrom in determining the guilt or innocence of accused individuals, have been responsible for the frequent failure of the law to accomplish its avowed purposes. Yet in spite of the all too evident short-comings of the law in the conflict with crime the fact remains that our prisons are full to overflowing, likewise our asylums for the criminal insane. In keeping with growth of population our penal institutions have been enlarged, but the increase of inmates has gone on to numbers out of all proportion to increase of population. This, taken in connection with the recognized deficiency of the law in securing convictions makes it certain that criminality is extending—and rapidly.

What are we going to do about it? The burden—in some communities much heavier than others—is becoming so serious that it bids fair to make all others insignificant by comparison. It is unfair, grossly unfair, that law abiding people should have added to the natural and legitimate economic problems of everyday life, this growing load of criminality.

It is obvious that our present day methods of coping with the criminal classes are inadequate. Like a cancer, criminality is daily eating its way into the body social. Efforts to arrest its progress have proven futile and little need be expected as long as society fails to attack the one great cause, not only for the growth of criminality but many other social diseases—unrestricted breeding among criminals and the mentally deficient.

Criminality has been called a medical problem. This is due unquestionably to the growing belief that medicine in its

broadest application should concern itself with the psychic ills of society no less than with the physical ills of the individual. Certainly thinking medical men are giving far more thought to psychologic and sociologic problems than ever before and the propriety of this is shown by an accumulation of evidence pointing to the fact that many psychic ills have their origin in physical defects of individuals. In other words, crime, intemperance, drug habits, insanity and imbecility, have each a physical basis, and such being the case, the conviction is forced upon us that environment has been much overrated while heredity has been much underestimated as governing factors in the mental, moral and ethical evolution of human beings. It is unfortunate that it has taken civilized man so long to realize that human breeding is subject to the same natural laws that he has so wisely and successfully used in animal breeding. The world wide awakening to the possibilities and an equally wide recognition of the needs arising from the enormous increase of insanity, imbecility and criminality have attracted the world's brightest minds—and it is high time. The confidence reposed in the natural law of "the survival of the fittest," has led many to anticipate that nature would herself solve the problem by causing the defectives and weaklings to succumb in the struggle. But it has been overlooked that civilization has made life and living vastly easier, and has robbed it of many of its hardships. Also that humanitarianism broadened and made effective by philanthropy has so nurtured and cared for the weak and unfit that to-day the law is practically reversed and it is unfit who really stand the best chance of surviving.

Without deprecating in the slightest any of the humanitarian or philanthropic

agencies that have saved so many of the weak and defective, it is monstrous that beneficent forces should long continue to jeopardize and retard human progress.

Society must protect its strong and healthy not only against contamination but also against needless burdens and handicaps. Therefore the confirmed criminal, or the hopelessly insane and imbecile must be prevented from reproducing their kind. To see that proper laws are enacted to this end is more than a right of the mentally sound and healthy—it is a duty. Dr. Robertson's splendid paper in this number considers the problem in a most interesting and comprehensive manner and few who read it will fail to appreciate the importance of the question so ably discussed. Dr. Robertson rightly lays stress on heredity as the great factor in the increase of crime and makes his plea for sterilization of the confirmed criminal or hopelessly insane on the grounds of thus striking at the main cause of an increase of criminality. It is to be hoped that false sentiment will not interfere with a movement that seems so essential and promises so much.

The non-contagiousness of leprosy

is evidently not considered as even a possibility by Dr. Victor G. Heiser, Director of Health in the Philippine Island. In his article in the *American Journal of the Medical Sciences* (Sept. 1909) he states that "the incontrovertible fact remains that every leper who is capable of giving off lepra bacilli is at least one centre of infection." This statement is nothing short of amazing in view of our overwhelming ignorance as to how the bacillus is acquired, and the still more overwhelming evidence that it is not acquired by di-

rect contact with another human being. We may accept Dr. Heiser's statement that since the Philippine lepers have been segregated, the annual number of new cases discovered has markedly decreased, but that merely proves that fewer remain to be discovered, not that fewer are infected now.

The mode of infection in leprosy seems to be an inoculation on the nasal septum, for the earliest sign is an ulcer "at the junction of the cartilaginous and bony portion." This raises a suspicion that the patient inoculates himself by his dirty fingers. The point to determine is how he gets the living bacilli on his fingers, and that brings us back to the ignored suggestion that the bacilli are normal inhabitants of some lower animal, and as they thrive in superficial tissues of a lower temperature than 98°, it points to a cold blooded animal. We are therefore amazed that the suggestion of a fish tuberculosis transferred to man, has received such scant courtesy. Unfortunately fish are not used for laboratory experiments, but it is high time that they should be. Jonathan Hutchinson has proved a connection between fish and leprosy,—not necessarily a fish diet, but transfer of bacilli from fresh fish to those who handle them. Such a laboratory might discover the original host and a serum, besides.

Return to nature has been a medical shibboleth because it is true, though we occasionally make a mistake in deciding what is natural and normal. A patient must seek his proper place for prompt recovery,—the Italian returning to his sunny skies and the Scot to his mists and fogs. In spite of all this, we have been so imbued

with the idea that Alaska is a land of snow and cold, we forget that such a description also applies to the mountains of Scotland and Norway, but that the Pacific slope is identical with the northwestern corner of Europe. Instead of sending patients on some wild goose chase for a mythical climate, why not let them take a trip to Alaska if they can afford it, and stay there long enough to recuperate? Why not advise people to settle there? It is a land of boundless wealth, both mineral and agricultural, and its population and prosperity are growing at a rate which few easterners realize. It is high time that the medical profession should use the therapeutic advantages of this new home for northern Europeans. The beauties of the scenery well repay a visit, but the medical knowledge is of more importance. After the permanent population becomes prosperous enough to afford some leisure, we may confidently expect it to rival that of northern Europe in originating ideas to advance our civilization.

An Apology. As must be apparent to most of AMERICAN MEDICINE's many readers, the utmost care is exercised to publish no articles as original that are not contributed exclusively to its pages. Last month we received a short article from Dr. Achilles Rose—a well known and honorable physician of New York—and from the personal note accompanying his article we inferred that it was contributed exclusively to AMERICAN MEDICINE. To our dismay, we received word from Dr. Rose—just as the journal was coming from the press—that he had also contributed the article in question to several other journals. As the matter then stood we had no alternative but to allow the article to ap-

pear as original. The following letter explains Dr. Rose's error:

EDITOR AMERICAN MEDICINE:

Permit me to present an apology for having submitted the article which appeared under the above heading in the June number of *American Medicine*, simultaneously to the *Medical Times* and the *Medical Brief*. Both of these journals published it in their July numbers. I have learned since that there exists a general rule that nothing of an *original* character, article, correspondence, etc., should be submitted simultaneously to more than one journal. I was not aware that this would apply to my purely personal communication of explanation and appeal.

A. ROSE.

We trust that our readers will understand our position and accept our assurance that we will publish no article in our original department that is not contributed so far as we know exclusively to AMERICAN MEDICINE. We have no dearth of material from the foremost physicians of America and we shall never if we can avoid it, foist any "repeaters" on our readers.

While the present issue contains fewer papers than ordinarily because of the unusual length of the first three, we feel that the quality and interest of those presented will compensate for any lack in numbers.

Unwashed fruit offers a danger that is too little appreciated even by many of our most intelligent and fastidious people. In cities like New York where so much fruit is sold on the streets from open carts and stands the evil is increased manifold. Apples, pears, peaches, grapes, berries and other fruits that are eaten uncooked are the chief offenders, and examinations that have been undertaken show a variety of germ life that would be astounding if the bacterial contamination liable to result from street dust was not already known. Flies are another great source of contamination.

It will be claimed by some that the organisms thus found on fruit are largely if not wholly harmless, and this is unques-

tionably true. But enough pathogenic bacteria have been repeatedly demonstrated on these common articles of food, particularly when exposed to flies, to make it certain that the presenting danger is very real.

Many city ordinances require that all fruits—and vegetables too—be screened. This, if followed, reduces the evil somewhat, certainly in respect to flies, but little protection is afforded against dust. In spite of the utmost care, this is bound to accumulate and with the inevitable contamination from handling, insures myriad colonies of bacteria on every piece of fruit.

All fruit, therefore, that is not cooked should be thoroughly washed. It is hard to impress children with the urgent necessity of this, and they are the ones most endangered. Realization of the constant tendency to cholera infantum, intestinal disorders, and the graver diseases like typhoid fever emphasizes the necessity of preaching and teaching every one from the youngest toddler up, never to carry a bit of fruit to the mouth until it has been washed—and well washed.

This is only one small detail in the general movement to eliminate or at least to reduce the possible causes of disease. To many, who recall their care free youth and remember that they came through unscathed, though they ate any thing and every thing in the way of fruit, with never a thought of washing it, the foregoing may seem trivial. But there is another picture of thousands and thousands of graves of little martyrs who did not come through unscathed. Every year acute intestinal affections claim an appalling toll of children and young adults. The cases that are directly attributable to unclean fruit may be few or many. That there are any is enough to show the danger, and once shown there can be no two opinions as to the necessity for its removal.

ORIGINAL ARTICLES.

STERILIZATION FOR THE CRIMINAL UNFIT.¹

BY

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Perhaps the first thought upon hearing the title of this paper will be: What is meant by the term "unfit" as used in this connection? To simplify my answer, likewise the treatment of the subject, I have made a general classification including the hereditary and habitual criminals, the chronic insane, the epileptics and the defective classes, and it is to be hoped that in a few years there may be included certain transmissible diseases.

I shall confine myself, however, almost entirely to the criminal branch of this great family or classification, not because it is the most important group, but because of my belief that, with increasing frequency, it is being recognized by the public that many criminals by reason of their physical deficiencies and diseases and their abnormalities are fit subjects for examination by the skilled alienist, in order that their exact condition may be ascertained, and this being determined and reported to the court, such disposition made of them as will best protect society; either by secluding them for long periods, or, by the selection of the institution best

adapted to their particular needs, endeavor to bring about a cure (or reformation), thus fulfilling in the broadest and best sense, the purpose of the criminal law.

Not many years ago the insane were supposed to be possessed by devils and were scourged and chained like wild beasts; and I believe the time is coming when the criminal problem and its solution will no longer be restricted to the processes of law but will be considered from the medical standpoint, as well. Furthermore, I believe that day is at hand, and to the degree that the legal and medical professions co-operate in their efforts, to that degree will the solution of this problem become less formidable.

Great advances have already been made in the humane treatment of the criminal and methods are now adopted to secure his reformation rather than to secure the infliction of punishment. An enlightened public is beginning to understand that he is confined not so much for punishment as to insure society against his depredations.

Without going further into reformative methods which unquestionably represent the best form of treatment now in operation for the solution of the criminal problem, and with but a passing allusion to the "indeterminate sentence," which is the greatest stimulus yet afforded for reformative results, it is gratifying to be able to report that the number of reformations secured by such treatment is far greater than ever before. Yet, notwithstanding all that has been accomplished, it is true that there is an actual increase in the number of crimes committed and in the number of criminals, and as would be expected, in the number of defectives as well as in the insane and epileptics.

¹Read before the Society of the Alumni of Bellevue Hospital, New York City, April 6th, 1910.

It is also true that the various forms of mental alienation, epilepsy and defectiveness are more quickly recognized, and the unfortunate persons suffering from such disease or defects, more speedily placed in institutions for treatment or custodial care than formerly.

The very fact of the existence of such humane treatment tends to prolong the lives of those in the public institutions, therefore society today is not protected by the natural law of the "survival of the fittest" as was the case in the earlier years. The number of crimes committed naturally increases with the increase in the number of laws, which are an accompaniment of civilization, while better police organization renders detection of crime more frequent.

At this point I wish to call your attention to the distinction between crime and criminality. Boies in his excellent work entitled "The Science of Penology," says, "All criminal legislators have failed to discriminate the vital and fundamental distinction between crime and criminality." Crime may be defined as a grave offense against morality or social order, and can exist only in a civilized community where there are laws regulating its government; where there are no laws there can be no crime. Changes in the laws are made from year to year with the progress of nations. What was a crime a century ago may not be so considered now. On the other hand, laws are added to our statute books every year making new crimes possible.

Crime is the expression of criminality which may be acquired or inherited. In hereditary criminality we find it in its most incurable form. This implies moral depravity—lack of the ethical sense. A

person may break a law thus committing a crime and not be morally depraved. Crime implies guilt and detection. Criminality is a diseased condition existing before a crime is committed and continuing after its detection.

Law deals with criminality only as it expresses itself in crime. Modern preventive medicine seeks to deal with criminality before as well as after crime has been committed, and by prophylactic measures attempts to prevent its expression and extension.

I would define a criminal as one whose powers of resistance are less than the stimuli that arise from the active motor impulses excited by excessive selfishness, malice, passion or misunderstanding of environment. (Antisociality).

Let us for a moment stop to consider the cost of crime and defectiveness. Mr. Eugene Smith, a distinguished lawyer of this city who is familiar with the criminal problem, in his paper on the "Cost of Crime," read at the meeting of the National Prison Association in 1900, estimates the expense at about \$600,000,000 annually. Mr. Smith further estimates that this would be an expense of about eight dollars a head for every man, woman and child in the United States.

Davenport, in his "Eugenics," says there are 300,000 insane and feeble minded, 160,000 blind or deaf, 2,000,000 that are annually cared for by our hospitals and homes, 80,000 prisoners and 100,000 paupers in almshouses, while thousands of criminals are not in prison. He estimates annual costs at nearly \$100,000,000 for hospitals, insane hospitals, almshouses, prisons and for the care of feeble minded, deaf and blind.¹

¹Davenport's "Eugenics," p. 32.

The Massachusetts Prison Association reports the cost of crime in the State of Massachusetts to be in excess of six and one-half millions of dollars annually—larger than any other item of State expenditure excepting that for education.

Another investigation conducted by Dugdale, states that a single family cost \$1,250,000 or one thousand for each of its degenerate members.

It is to the investigators of crime, pauperism and degeneracy that we must turn for our most authentic statistics. Perhaps the most carefully prepared genealogy of a criminal family is that of Mr. Richard Dugdale who, in 1873, at the instance of the New York Prison Association, while making an examination of certain families, collected and published the genealogy of a family which he names the "Jukes." Beginning in 1720 with "Max," who was a shiftless vagabond and drunkard, seldom working, and about whom not much more was known, he traces some one thousand two hundred descendants recognized as having been criminals or dependents and inmates of penal or charitable institutions previously to 1874. None of them ever produced anything of value to the community, performed any public service or held any official position. 310 were in poorhouses, 2,300 years in all; 300 died in childhood; 440 suffered from a vicious disease; 400 were physically wrecked early by their own wickedness; 50 were notorious prostitutes; 7 were murderers; 60 were habitual thieves who spent an average of twelve years each in prison; 130 were convicted more or less often of crimes. A very few seemed to be decent. They usually married in their own class,

seldom bringing any good blood into the family.¹

For purposes of comparison I will cite the Edwards family; Jonathan Edwards, born in East Windsor, Conn., 1703; 1,394 of his descendants were identified in 1900, of whom 295 were college graduates; 13 presidents of our greatest colleges; 65 professors in colleges, besides many principals of many other important educational institutions; 60 physicians, many of whom were eminent; 100 clergymen, missionaries or theological professors; 75 were officers in the navy or army; 60 prominent authors and writers, by whom 135 books of merit were written and published and 18 periodicals edited; 33 American states, several foreign countries and 92 American cities and villages profited by their beneficent activity; 100 were lawyers; 30 were judges; 80 held public office, one of whom was Vice-President, and 3 United States Senators. It is not known that any one of them was ever convicted of a crime.

Barr gives us the following additional data from his experience: "A feeble minded man of thirty-eight has a delicate wife who in twenty years has borne him nineteen defective children.

"A feeble-minded epileptic mother and an irresponsible father have seven idiotic and imbecile children.

"The 'L' family numbers seven persons, both parents and all five children imbecile. * * * * The 'R' family where 'A,' insane, marries in succession two mentally weak wives and has thirteen children, all mentally weak."

In a case described by Bennett, a defective father and an imbecile mother have

¹ "The Jukes," Dugdale, pp. 68 to 70.

seven children all more or less mentally and morally defective.

Of the many interesting cases that came to my attention while at Elmira, I have selected the following to supplement those already quoted. The first is that of a drunkard, who, after having served a term in prison for burglary, married a feeble-minded woman; they had nine children of whom the eldest, a drunkard, has twice been sentenced to the penitentiary for larceny; he had two children, both of them being brought up in institutions, the wife having died of drink and exposure. Another son, Edward, twenty-eight, also a drunkard, is now serving a sentence of fifteen years in Clinton prison for highway robbery. Ellie, twenty-seven, a drunken prostitute, has one child five years of age, said to be feeble-minded, who is in an institution; the mother was in a house of prostitution for five years and has served five months and three months in the penitentiary; her husband is in prison, with her brother Edward, for highway robbery. Jennie, twenty-three, who is addicted to drink, has two illegitimate children. Michael, twenty-two, drunkard, is in Clinton prison for robbery. Charles, twenty-one, drunkard, has been convicted of burglary and is under a suspended sentence. Margaret, twenty, is an imbecile, but is able to work. John, sixteen, is in Elmira reformatory for a burglary, and Henry, fifteen, arrested for truancy, is now in a reform school.

The second case is that of a defective drunkard who, on release from prison, married a woman by whom he had six children. She died when the eldest was fourteen years of age. The father never supported his family and was twice arrested for this serving sentences in lieu of fines.

He eventually disappeared. On the death of the mother the eldest girl, Nettie, then fourteen years of age, was taken by an aunt. She was incorrigible and at twenty gave birth to an illegitimate child that is being reared in a state institution. Thomas, twelve, was taken by a friend and is now respectable and a member of a religious order. James, an imbecile, with Ella, a *tongue-tied* imbecile, George, seven, and Lizzie, four, were placed in a public institution. James, at seventeen, was released, and a year later his sister Ella was also sent to the home of the relative where James was living; in a few months it was found that Ella was pregnant by James, who was sent to Elmira for abduction. He was subsequently convicted of burglary. The two younger children are still in institutions, the boy said to be an imbecile and the girl to be very unruly.

I have never *known* and I do not recall any *reported* case where imbecile parents have produced a normal child. So far as I have been able to observe, the marriage of imbeciles has been followed by the birth of defective children. Nor can I find recorded anything to alter the generally accepted opinion that the army of mental defectives with all its attendant criminality is largely recruited from this source, there being a close relation between imbecility and criminality.

The report of the Royal Commission on the feeble-minded in 1907 states: "First: There is the highest degree of probability that feeble-mindedness is usually spontaneous in origin, that is, not due to influences acting on the parents. Second: That it tends strongly to be inherited." One of the commissioners in the *London Times* says, "by 'origin' we mean the first occurrence of feeble-mindedness in a line of in-

dividuals. By 'spontaneous' we mean that occurrence is usually due, not to influence such as disease or hardship acting on the progenitor of the afflicted person, but to a peculiarity which arises in him spontaneously, as an extra finger or toe when it appears for the first time in a line of individuals; when once the peculiarity has appeared it tends strongly to be inherited."

For a number of years as you know I had every opportunity to study the criminal at close range. (And when I say criminal let it be understood that I refer to the hereditary and habitual types.) As a result of this study, (as you would suppose) I found them possessed of a vast number of physical and mental peculiarities, while almost without exception they had a diminished conception or an entire absence of anything like the ethical sense. Insanity, epilepsy and the various degrees of feeble-mindedness or defectiveness were ever present, while tuberculosis I found most common. They were highly emotional and without sufficient provocation would give way to hysterical or maniacal outbursts during which they smashed everything within reach or sought to inflict bodily injury on all that crossed their path. As a class they are inordinately conceited, selfish and cruel. We should expect, then, in investigating their family histories and antecedents to find insanity, epilepsy and defectiveness, together with nervous disorders, alcoholism, syphilis, tuberculosis and drug habits, frequent and common factors, and we are not disappointed. I believe my experience agrees with that of others who have at first hand investigated this subject. In studying the records which I made, covering two thousand cases received during the time I was superintendent of the New

York State Reformatory at Elmira, I find by their personal acknowledgment that 61 percent smoked tobacco; 20 percent chewed; 65 percent used alcohol in some form; 2 percent were addicted to drugs; 24 percent suffered from venereal disease; 28 percent were defective; 5 percent were epileptic; 2 percent were insane on admission or regarded with suspicion; 22 percent were in poor physical condition. Regarding the antecedents I found a record of insanity in 5 percent; of tuberculosis in 17 percent and of epilepsy in 5 percent.

Maudsley rightly says of this class: (the criminal) "Crime is a sort of outlet in which their unsound tendencies are discharged; they would go mad if they were not criminals and they do not go mad because they are criminals." Some accidental criminals may be like the normal man, but no more fallacious conclusion could be reached than one that contends that the hereditary criminal may, by being placed in a proper environment for a short time, be converted into a normal individual. This inability on the part of the criminal to profit by environment which is so important an adjunct with us, is an exhibition of defectiveness that has been most clearly explained by Sanger Brown, who accounts for certain phenomena by assuming a defect or defects in the neurons of such a nature that stimuli from environment may not reach the neurons of the cortex, or, having done so, the impression made there may not be sufficiently deep or lasting. In other words, it may not be well elaborated. It is this defect that prevents their response to educational influences, moral or intellectual, or both.

I desire to lay stress upon two characteristics of the criminal and defective

classes; the small amount of self-control they exhibit and the absence of fixed purpose or perseverance. Excluding from consideration the moral or ethical endowment it is the lack of these two qualities that places a large number of defectives in the ranks of the criminal. Having no purpose in life nor the perseverance to follow any undertaking they drift around eager for adventure; and without the self-restraint or will-power to resist a temptation, they readily yield to crime and soon exhibit their hereditary criminality. In the possibility of compassing the reformation of the *accidental* criminal I have implicit faith, but the probability is strongly against the reformation of the *hereditary* type. I know the expression of this opinion will give pain to sentimental mollycoddles who believe that no matter what the birthright may have been, or how depraved, diseased or defective the progenitors, the product of such unions is as susceptible to reformative measures as is that which, coming from *good stock* has yielded to sudden temptation, or, placed in a bad environment, fallen a victim to evil association or counsel. It is from the latter class that the reformations come, and from the ranks of the former the recidivist or habitual criminals are recruited. The study of the "Jukes" and other family trees, careful observations of criminals and painstaking investigation of their antecedents, lead me to the conclusion that the tendency to criminality is more frequently transmitted than the tendency to mental disease.

We must not lose sight of the fact that there is a large body of individuals who become habitual criminals, *not* because of inherited tendencies but because of their failure to attempt the resistance of down-

ward impulses. Each time they yield these impulses become more powerful until finally the subject becomes an habitual criminal. It is very difficult to present in figures the inheritance of this class. It is much easier to furnish statistics of families that for generations have been leaders in the arts and sciences or in business pursuits. Different localities would furnish different lists of names but it would be found that "like begets like," whether in criminal or cultured classes, were we able to collect a corresponding amount of data.

Most animals attain their full mental growth in a short time. It is not so with man. He requires years of careful training to reach a fully developed state, but beyond this there is something that we must all recognize and include in our calculations, namely, *inheritance*. This is the factor that accounts in a great measure for the difference existing between two individuals placed under similar environment and having before them the same opportunities for development. In other words, by his natural inheritance or phylal habits, a certain destiny is made for every individual.

I am not ready to adopt the theory that environment can overcome every existing condition. It seems to be the popular belief at the present time that the salutary influence of a wholesome environment would, if it surrounded a certain class of individuals, make them successful and law-abiding citizens. I have seen many a man go forth from the reformatory to an environment as good as could be desired, without being in any way influenced by that environment; on the contrary, the work and training of years would, in a short time, appear to be completely undone; others I have known, placed in far

less favorable surroundings, perhaps without the previous preparation, have been able to withstand all temptation, and have become respected and self-respecting citizens.

From this practical experience I have finally reached the conclusion that while desirable environment is essential in any scheme of reformation, it cannot compensate in the majority of instances for poor heredity, assertions to the contrary notwithstanding. In practice, the fallacy of too great regard for environment becomes easily apparent. Why is it that great men have risen from undesirable environment and rascals from the best? Training and education do not insure uniformity. Far more frequently than by training and surroundings, inheritance prompts a man to acquire knowledge and seize favorable opportunities for the accomplishment of any desired end; this, together with a normal, ethical balance is the weapon with which he wins success.

We have been paying too much attention in our philanthropic work to environment and too little to cause. We should give more attention to proper breeding—certainly as much as we give to secure good breeds of stock. Every public-spirited citizen should be interested in the improvement of the race, call this improvement eugenics, stirpiculture, better breeding or whatever you like, the necessity for its consideration is unaltered.

It is true that some feeble efforts have been made whereby laws preventing marriages of the unfit have been passed, but unfortunately marriage is not necessary to procreation, and as the classes under consideration are not governed to any great extent by high moral considerations, those laws do not militate against their in-

crease. They are prone to have large families, the support of which gives them no concern as the burden of their maintenance is readily transferred to the state. Their progeny with the degenerates from the upper strata largely fill our penal and charitable institutions.

Race improvement may be brought about only by careful selection and constant effort to maintain a fixed standard. Animals are selected for their physical perfection while normal human beings select their mates chiefly because of their psychical or temperamental endowment and in practice this works out well; not so, however, with the criminals, imbeciles and others of the unfit, as their environment and habits prevent them from breeding upward even were they so inclined. Their numbers are constantly augmented as is evidenced by the rapid growth in the size and number of our public institutions, and the tendency is indisputably toward increase in numbers and "mongrelization."

Does it not seem that we have been imposing a heavy and ever increasing burden upon a long-suffering public through our efforts to prolong the life and overcome the defects of the unfit? Custodial care has been increasingly extended to the female members of the unfit during their childbearing period, but we are allowing the male factors in the problem to run loose. As I have said, laws have been passed forbidding those with certain diseases to marry, but children born out of wedlock are usually subjected to a worse environment than those of legitimate parentage, accordingly this measure is but partially effective. It is simply a *corrective* and not a *preventive*, no appreciable diminution in numbers of degenerate or criminal classes being apparent.

We are therefore brought face to face with the question, Have we the right, (in order to protect society) to interfere with the processes of reproduction thereby preventing procreation among the unfit? It has been urged by opponents of such procedure that legal sanction would be declared unconstitutional, that citizens cannot be subjected to any "cruel or unusual punishment." This objection has been considered but apparently has not been sustained as several states have already placed laws on their statute books providing for the prevention of procreation among the unfit.

So far as I have been able to ascertain Indiana and Connecticut are the only states that have passed laws authorizing vasectomy; California provides for asexualization and in Oregon a bill providing for vasectomy was vetoed by the governor; in Illinois a bill passed the Senate; Washington¹ in its new criminal code provides for "operation for the prevention of procreation" upon persons convicted of certain crimes, and in the states of New Jersey, Ohio and Utah and the province of Ontario, Canada, bills providing for sterilization have been introduced for confirmed criminals. Switzerland practices sterilization on its criminals, and Germany is agitating the matter.

Though the measure has in some instances met with defeat the agitation and its attendant activity is indicative of the trend of public opinion. People are alive to the fact that something must be done and that speedily.

Naturally the question is one that surrounds itself with conservatism, and that the public is aroused to the present state of interest, demonstrates the need of more

stringent measures to prevent this alarming increase of criminals.

I grant you that it is a serious thing to rob a man of his power of procreation. It is a *more* serious thing to assume the responsibility of deciding who are to be classed among the unfit.

But I tell you, gentlemen, this is a question about which we cannot let our sentiments run away with our reason. It is a question in which is involved the very welfare of the nation. *Something must be done.* We may educate and legislate generation after generation—without removing the *cause*, the *effect* is ever with us.

Science has come to our aid and as a means of overcoming the condition confronting us, we have the sterilization of the unfit. We cannot afford to condemn the measure on account of personal prejudice. We cannot afford to dismiss it until its demonstration has proved a failure. This general term sterilization covers the operation of castration and vasectomy. Sterilization by the "X" ray being only temporarily effective, it is vasectomy in which my interest centres. It is simpler in operation leaving a man otherwise perfectly normal after treatment. There is no attendant danger or inconvenience as the patient is able to go about his usual duties in an hour or two after having been operated upon. It robs him of none of the satisfaction of sexual intercourse, simply deprives him of the power of impregnating, by the retention of the spermatozoids in his own system.

Probably Dr. Sharpe of Jeffersonville, Indiana, is the physician who is best qualified to give an expert opinion on the subject, having operated upon nearly five hundred men. He claims that no evil effects

¹Laws 1909, Chap. 249, Section 35.

follow, on the contrary, that benefits are derived; that mental stamina is given a new impetus for expression, and that physical as well as psychical benefits are imparted. One of its advocates has gone so far as to say that in four generations it would be the means of wiping out nine-tenths of the crime, the insanity, and illness in our land. I do not claim for vasectomy all that, neither do I say that all that is not possible. I *do* say that the United States is menaced by the increasing population of the unfit and that, unless some immediate and heroic action is taken we may find ourselves in the midst of a degenerate class too powerful in numbers for us to cope with. I take this radical stand after thoughtful, careful investigation and long experience with the criminal, insane and defective classes. I believe we have a means at hand whereby the desired end may be accomplished. Other methods may be forthcoming which will be an improvement upon this. We *have* this, and at present it is our *best*. It is entirely harmless, it is simple. It robs the criminal of the privilege and responsibilities of fatherhood, which we esteem for him, but which he does not esteem for himself. If, as its most ardent advocates claim for it, we restore man to a higher sense of living what have we to fear? If he should prove himself morally responsible the function could be restored! Even if this were not possible I ask you, if the generation of criminals is worth more than the *re-generation* of our nation. Those of you who hear occasional statistics read and dismiss the burden of proof as you would that of any other great economic questions, which do not enter into our profession to any extent, have not the slightest conception of the degeneracy with which

our country is burdened. Those of us who are or have been in any way associated with the unfit *know* whereof we speak. As I said in the beginning, I believe the unfit are subjects for medical treatment. If we assume this responsibility and continue a campaign of educational experiments what will have been gained? I need not remind you that extreme cases warrant extreme measures.

Personally, I see in vasectomy a way of escape from this appalling economic and social menace, and to the end of creating public sentiment in its behalf I shall make unrelenting effort. Can we afford to have divided ranks in our opinion? The attitude of the profession will largely determine what can be accomplished. By energetic and concerted action we will win, by indifference and indecision we will fail. As a profession this is an opportunity for us to reject or accept. What is your choice? Personally, I am committed, and cordially, to the adoption of vasectomy.

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DISCUSSION

Dr. Lamb in Discussion said:

When Dr. Robertson first wrote me and asked that I come down here and say a few words in the discussion of his very interesting paper, I replied that I was not at all sure that I could endorse it *in toto*. Dr. Robertson gave me the privilege of saying whatever I thought best to say, and it is under this license that I speak tonight.

Those of us who have had much experience in institutions which deal with the deranged or criminal class, realize that there is a very large proportion of both classes who are singularly deficient in mental endowment. They have little or no self-control and are in no sense originaive. I think we realize too that it will be impossible through any means of treatment to remedy this fundamental defect. At the same time, we are impressed that the commonwealth takes care of an unusually large number of these individuals. Whether or not the proportion of such has changed

in the last two or three decades is a matter of question. At the present day the mental equipment of the criminal receives more consideration than at any time during the history of the world and I believe that, even with the present day methods, we have far from reached the final stage of the evolutionary process. Is it not a fact that we of the institutions, who have such intimate contact with the segregated members of society, may take a somewhat narrow view of the whole field and think that because the part which comes under our immediate observation is bad, that the whole must be more seriously infected than it really is? I think it is a fair assumption to say that where one defective individual is cared for by the State, at least three are maintained by members of the family, who are provident and self-sustaining. There are very few families of any size who are wholly free from "black sheep." If they are not actual criminals, they are at least not successful and require constant aid from the strong members. Who can say why the defective one has been born of the same parents who bore the strong and self-reliant one? I am a firm believer in the progress of the entire social organization. The number undergoing degeneration to my mind is no larger now than it was a hundred years ago. The demands made by society on the individual, however, are greater. The weak fall more easily than under more simple conditions. The strong, too, win larger rewards and are more able to make provision for the care of the weak.

Some few years ago a request was made that I furnish a National Society with the records of defective families in my own personal acquaintance. The question was asked in a restricted sense and I was to name families only wherein the entire family showed, in my judgment, degeneration. At the outset I conceived the task as an easy one and thought that my figures would be astonishing. So they were. But the astonishment was on my part, as when I came to look up the matter I found that I could name only four families where the defective organization was plainly apparent. If the average physician in general practice were asked to perform the same work, it is doubtful if he could find

more than one or two families to add to the record. It would seem a fair question to ask—what constitutes degeneracy and who is to pass upon those who are alleged to be degenerate and unfit? In other words, what are the qualifications for sterilization, and who will say who shall be sterilized and who shall not be sterilized? If operative procedure is to take place, to my mind it is far more important that the female instead of the male receive the sterilizing treatment, and the operation then becomes a far more serious one. Provision already exists in this State whereby he who is adjudged an habitual criminal may be confined for life, thereby rendering him inert as a social menace. Yet only a short time ago I read in the daily papers of the case of a man who had all the qualifications of the habitual criminal, on whom this sentence might have been pronounced, who did not receive it simply because the judge before whom the trial was had would not pronounce such a sentence. If the sterilizing procedure were in vogue, it is not altogether unlikely that there would be the same hesitance to apply this operation.

According to Dr. Andrew McPhail who writes in his "Essays in Puritanism" of Jonathan Edwards: "His philosophical writings have long since gone into the rubbish of libraries, * * * *, his sermons merely move men to scorn or mirth." His congregation steadily grew smaller, according to Dr. McPhail. Finally, he left Eastern Massachusetts and went West into the wilds preaching to the Indians. And Dr. McPhail further records that even the Indians became discouraged at his view of theology and decamped, leaving the preacher practically without hearers. Yet his descendants were undeniably strong and made remarkable records in the history of the country. Indeed, one may be bold enough to say that Jonathan Edwards' chief good was in the production of a family of numerous size and great strength. It is to be said that the Edwards family were reared in favorable environment.

If we on the other hand look at the Jukes, we find that it originated and lived in an unfavorable environment. Yet we find that only about ten per cent of its

members were criminals, and that the larger the family became the less the percentage of criminals became.

Roughly speaking, one might say that three ways of dealing with this defective class suggest themselves. First, by destruction, second, by seclusion or colonization, and third by sterilization. Any destructive process would not for a moment be considered in this day of civilization. Colonization is now in vogue to a certain extent and to me seems the wisest solution of the problem that has yet been offered. The third is comparatively new and should receive great care and consideration before it is actually adopted.

I think we are indebted to Dr. Robertson for bringing to the attention of this assemblage a topic of so much importance. It is my belief, however, that after the matter receives the attention which it deserves, it will finally be seen that any mutilative attempt to change nature will not receive public endorsement, and that the Empire State will not put on her statute books any operation which conflicts with laws already established. It is now indirectly forbidden, and with our present knowledge of the subject, it would seem altogether unwise to alter existing conditions until carefully prepared statistics, gathered as the result of operations in other States, prove the correctness of view of its originators and justify the means to a definite end.

Hon. Warren W. Foster in continuing said

that he had formerly held the opinion that criminals were largely a product of environment, but that he had after personal experience and study of reports of investigators, become convinced that heredity played a most important part in their production. He cited a case in which he had suspended sentence on a young man on promise of reform and gave an interesting resume of the facts. The man was soon after arrested in another state and served a sentence there, brought back here, and paroled on condition of celibacy, which condition was both praised and criticised by the press, some understanding the reason for it, others not. Very soon the man showed his innate criminality, and was

again arrested for theft and sent to State's prison. The Indiana law has been in use for 10 years and has resulted well. The law in Connecticut provides that: 1. In the State prison the resident physician and two other physicians shall constitute a determining board. 2. In the insane asylum the resident with two others shall act as a board. If they deem that a person under detention is unfit to procreate, they shall have power to perform the operation of vasectomy or oöphorectomy. 3. It is a felony for any other physician to perform the operation. Such a law was suggested for New York but it was thought wise to wait and watch its operation in Connecticut.

Judge Foster said that it was difficult to bring a matter of this kind into common discussion because of a false modesty. He later wrote a magazine article on the subject of *Hereditary Criminality and Its Certain Cure* and sent copies to prominent men for criticism and comment. The replies were tabulated and showed that a large majority favored and that very few had ever heard of vasectomy. Many of these correspondents volunteered the information that they were Protestants, Jews or Catholics, though no request for it was made. It seemed from their answers that members of the two former faiths for the most part seemed to approve, while numbers of the latter opposed it. One father called it interfering with a "God given right." A judge who had been a doctor, thought it might increase illicit intercourse by creating a class of men who could indulge themselves with impunity. Dr. Austin Flint said that the criminal problem was in many of its aspects more for the physician than for the lawyer.

The penal law is based on the theory of personal responsibility, and this is the attitude of the lay mind. Modern penology has come to recognize that there are individual and inherited characteristics which seriously diminish responsibility thus leading to and increasing crime.

Dr. Wm. J. Chandler in continuing said

that he wanted to extend his thanks to Judge Foster for the advanced views he as a jurist had expressed in regard to the

prevention of crime. For prevention is even more important than the punishment of crime. He said that he thought all would agree that heredity played the important part in the production of crime. The operation of compulsory vasectomy was not advocated for any but the confirmed criminal, who is usually the hereditary criminal. He said that if we know that the tendency to crime is inherited we must stop the breeding of criminals. Education and environment will do a great deal but the important matter is the material we have to educate. Two boys beginning together at school,—one will outstrip the other. It is the difference of material, and it is the same way with the criminal.

An operation, which as Dr. Sharpe has shown improves the criminal mentally, morally and physically, and at the same time stops his procreation, is to be seriously considered. He said that we should do all in our power to influence our lawmakers to give us the advantage of such a law.

Dr. Carlos F. MacDonald in continuing said:

I am quite in accord with Dr. Robertson in differentiating crime from criminality. In a general sense any violation of law to which a penalty is attached is a crime even though the individual committing the act be devoid of criminal intent. Indeed, such violations of law—such "crimes," are of daily occurrence—while the penalty, if any, to be imposed in these cases naturally revolves around the proposition that there is no crime without criminal intent; and it is true that in a large number of criminal cases the jury must ascertain the intent of the accused in order to determine whether or not a crime has been committed. There is a wide distinction therefore between crime, in the sense in which I have used the term, and criminality, embracing in the latter term only those individuals who are criminals by nature—born criminals, so to speak, a large majority of whom are the progeny of criminal, alcoholic or otherwise mentally diseased or defective parentage. Such being the case it behooves us to take into account the part that heredity plays in the genesis of crime. As a result of a some-

what extensive study and observation of the criminal classes, both sane and insane, I would attach far more importance to heredity than to environment in the production of true criminals; and while we may properly give due weight to the influences of environment, I believe that no training nor favorable conditions with which we may surround the hereditary criminal are likely to result in permanent improvement or reformation; and while we may admit that these cases, under favorable influences, are susceptible of a certain degree of improvement, they almost invariably relapse if the environmental influences are withdrawn and they are left to themselves. Striking illustrations of this fact are often seen in the lives of children who are adopted by well-to-do families and reared under the most favorable auspices. They are unstable, vacillating, lacking in continuity of purpose and moral stamina and rarely develop business or other ability of a superior order.

Respecting the physical so-called stigmata of degeneration, to which Dr. Robertson has referred, and which have been so much exploited by the Lombroso school, I do not attach much importance to these, for the reason, that it is exceptional to find an anatomically symmetrical individual. On the contrary, many of our most intelligent and even brilliant men present well marked physical asymmetries and irregularities—especially of cephalic and facial contours, and of the extremities, etc. It is the mental side that we should look to for obliquities or lopsidedness in seeking for diagnostic signs of mental degeneration or defect.

Dr. Robertson has also referred to the prevalence among criminals of alcoholism, drug and tobacco addictions, venereal diseases, sexual excesses and perversions, etc. I do not attach much importance to these things, as regards either the etiology or symptomatology of criminality—the reason being that in every community are to be found many individuals who suffer more or less of these conditions and yet are mentally normal, according to our present standards of normality.

The real object of dealing with crime and with criminals is the protection of society. This being true, there is no valid

reason why society should not still further protect itself by making statutory provision for the prevention of child bearing among the so-called unfit, that is, the criminal classes; and I believe that the time is not far distant when the necessity for such provision will be recognized and the means for its fulfilment adopted in every civilized community. We should not hesitate to apply the same principles to the criminal and degenerate classes that we apply to vicious or unfit animals, if by so doing it would, as I believe, result in materially lessening the vast amount of misery, crime and distress which are now so prevalent on every hand, not to speak of the economic aspect of the question.

Respecting the operation of vasectomy as applied to the degenerate and criminally unfit, this has already been legalized in several of the states, including Indiana and Connecticut.

Dr. Sharpe, physician to the Indiana State Reformatory, reports that since October, 1899, he has performed this simple operation upon inmates of that institution many times, without anaesthesia and without any untoward results. On the contrary, it was followed, in substantially every case, by improvement in the general character and disposition, a lessening of nervous fatigue and irritability and a decided increase in energy and sense of well-being. There was no atrophy of the testicles, nor impairment of sexual desire or of its gratification. In view of these facts I have no hesitation in recording myself in favor of the operation as applied to the defective and criminal classes, under proper legal restriction.

Tarsalgia in Adults.—Dr. Reynier (*Muench. med. Wochensch.*, January 26, 1909) believes that this affection occurs almost exclusively in persons with a hereditary nervous disposition, the family history often pointing to alcoholism, epilepsy, hysteria, tabes, etc. The patients frequently present more or less decided nervous disorders, and usually tire easily on prolonged standing, in consequence of which atony of certain muscles and contracture of others is developed.

THE VALLEY OF THE SHADOW OF DEATH—THE SIGNIFICANCES OF MORTALITY STATIS- TICS.

BY

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It has become "the wisdom of the vulgar" that the mere arithmetic statements of the phenomena of living things is so inexact, so nonsignificant, so in need of perpetual corrections, checks, and explanations, that from them alone one gets little light upon the matter in hand. "Figures," it is said, "must be made to open their mouths and speak," Statistics are "liars and deceivers," "Counting is concealing." In the last resort curves and diagrammatic number-pictures of vital phenomena are meaningless; although numbering is at least one basis or prerequisite of exact knowledge. If he is wise, one who knows "the arithmetics of the matter" may know it better than any other.

The reason for the nonillumination of the figure-rows, and even of the diagrams, is chiefly that they present us with the percentages, or the averages, while the really valuable individualisms are as much obscured. There is a school of pseudoscience, one knows, that says it is the type only that exists, or persists, or that is aimed at by nature, whilst the units die, and, in fact really are not. But that hardly satisfies moral and sensible men, for they incline to the belief that the more abstract the truth the more useless and meaningless it is. It is indeed false that "being and nonbeing are identical"; but, of all abstractions, that of enumerating is, *per se*, little more significant than those of being and nonbeing. Qualities, conditions, his-

tories, causes, etc., are of course omitted, and all individualisms, by the tables, charts, and percentages, are forced into the Procrustean beds of meaningless, if not tyrannical theories.

Take the mortality-tables of the life insurance companies—how the real facts, even of deaths, are lost or hidden by the averages! The keen medical examiner of the companies knows how vague and inaccurate they are, how modern occupation-diseases, and the progress of medicine and hygiene make the diagrams incorrect, not only in themselves and at one time, but demanding changes in those of yesterday as compared with those of today; and again of those of to-morrow.

For the individual, himself alone concerned, and for a few who stand near to him, the importance of death is, to be sure, immense, and this has loaded the dice of the statistician and scientist, surely of the physician and hygienist, to the exclusion of vastly more important concerns. It is assumed that the mere fact of non-death, of continued living, is the all-important thing upon which to fix the attention. But sociologically speaking, the extension of useless non-enjoyable living, the mere postponement of the approaching and inevitable end, the expensive stretching-out of invalidism, inaction, and senility,—these are not the aims of any sort of wise thinking, or of genuine sympathy. Human love and human science, it is true, command the prolongation, but also and equally the obviation of its temporary necessity. The master-questions are, What kind of living? Why not better living? What are the causes of the less desirable life? The glaring questions suggested by the obsolescent mortality tables are: What are the causes of premature death, or rather, of

crippled and yet continuing lives, of sickness, of chronic invalidism, of premature senility?

Ethics and ethical teachers and institutions may therefore not be left out of the count, as effective soldiers in the battle against disease. So-called science has become a communicant of the fashionable church of materialism, atheism, and fatalism. Where there is no freedom there is, of course, no sinning. But to the open-eyed, whether faithful or faithless, it is startlingly evident that sin, simple old-fashioned sin, is the source of a vast deal of the diseases which make the statistical tables what they are. The roles played by syphilis and gonorrhea alone prove this. To the science of the day's vogue, to the therapeutics which denies the very existence of sin, these sin-produced diseases are both incurable and unpreventable. "Stop the causes and you stop the effects," is not admitted, is utterly ignored, at least, by this and many other kinds of therapeutic nihilists. And yet, no man with intellect and heart can deny that the curves of the mortality and morbidity tables are what they are because of the diseases that result from the enormously prevalent sins of alcoholism, "self-doping" (morphin, cocaine, etc.) venal legislation, gambling, avarice, lubricity, homicide, infanticide, etc. It is only a practical ethics and a genuine religion, products only of a belief in God and in personal freedom of the will, that can find a rational and effective therapeutics for these diseases. Truer than in olden times it is today beyond sane doubt that "the wages of sin is death." But the professional text-books upon *Materia Medica* and therapeutics do not list the antidote. "The herb does not grow," at least in present-day soils and laboratories. "Bi-

ometry" is based upon and "shored-up" by materialism and determinism, and yet the mortality tables are rapidly transformed by the conscious "free will" of the hygienists.

A dozen or more millions of deaths out of one hundred millions, occur in the first year or two of life. Sin is the chief murderer. A striking illustration of its influence in negating the primal law of God and Man is shown in the causes of the decline in the birth-rate in New South Wales. Of course the role of *this* sin, however important, is only one of many, everywhere active in civilized life to lessen the effectiveness of the struggle against disease and death. According to one of the most valuable and thoroughgoing *Royal Commission Reports* ever issued ("On the Decline in the Birth-Rate and on the Mortality of Infants in New South Wales. Sidney, Government Printer") with a population increasing, from 1887 to 1892, 39 per cent, (with marriage-rate identical and age-constitution practically the same) there was an increase of births of only $1\frac{1}{2}$ per cent. With overpowering proofs unflinchingly presented, it is shown that the diminished fecundity was specifically and directly caused by "the deliberate prevention of conception, destruction of embryonic life, and their pathologic results." In hundreds of pages the details are set forth, charted, and pictured, that the sudden and enormous decrease in the birth-rates was actually traceable to "the trade in the materials used for the prevention of conception and the destruction of fetal life, carried on by druggists, the articles carried from house to house by hawkers and by women, etc." And this in a new country, needing above all things the human products of the successful early

settlers! "who can tell," adds the Report, "what progress New South Wales might not have made, if, since 1864, 280,000 citizens had not been lost, and had performed their share in the development of the country; or what strides in prosperity Australia might have taken, in the same period, with the assistance of nearly a million more inhabitants?" "To the weakening of religious restraint and the consequent free play of selfish motives" the Royal Commission Report quoted, ascribes a larger share in the decline of the New South Wales birth-rate. New York and Paris supply the "Malthus Sheaths," "Caps," "Protectors," "Pessaries," the "No More Worry Companies," and their "pills," "Mixtures," "Cures," etc., of a hundred names. To the literature distributed with antireligious and immoral enthusiasm by "Neo-Malthusian," atheistic, and other societies, the Report traces much of the degradation of the marriage state, demoralization of individual characters, mortality of infants, etc., which brought about the decrease in the birth-rate.

The birth-rate is in truth of perhaps greater significance than the death-rate. The inaccuracies of the tables of infantile deaths, the impossibility of registration of still-births, and especially of antecedent sins and crimes, merely emphasize the fact that the amazing upsurge of the death-line just after birth mathematically compels its dolorous extension into prenatal life.

To know and to stop the causes of the needless deaths is the work of preventive medicine, but to be effective preventive medicine must know the causes of the individual deaths, must extinguish them, must emphasize the unit instead of the abstraction, the single life instead of the average, must replace history by prophecy,

the dead fatalistic acceptance of "Law" and of the past by free and living action as regards the future. The death-table must therefore be transformed into a life-table, because the dead man is dead, and because the still-alive man, in order to take warning and to preserve his life, must understand the causes of the premature deaths of his relatives and friends. The mortality table is a mere gathering of the larger number of deaths of his neighbors known or unknown. Inexact and ever-varying as it is, or should be, changing or needing to be changed every day, it will still suggest to him that death, except of the very aged, is usually an unnecessary, or obviabable thing, and that he and his should avoid it. Hence by transforming the death-table into a life-table, he will be rid of the smudging out of individualisms and details by percentages, and by the averages, of many year periods. Thus he will seek to know the actual number of individuals dying each year. The significances of the figures will be heightened by supposing that all of his living fellow citizens were born in one day. Soon it will be seen that this, his own country, will have 100,000,000 of inhabitants, and for ease of calculation the table made upon this basis will state the number of his fellow-citizens who, supposedly born all in one year, still survive each succeeding year. Here is such a table:

OF 100,000,000 MALES AND FEMALES BORN, SUP-
POSABLY IN ONE YEAR, THE FOLLOWING NUM-
BERS APPROXIMATELY WILL DIE, AND
SURVIVE, DURING EACH YEAR.

(Deduced from the Healthy-Districts Life-Table,
England and Wales, 1900-1902).

Age.	Annual Accelerations or Retardations		
	Deaths.	of Life-Loss.	Survivors.
1	10,852,500		89,147,500
2	2,415,100	—8,437,400	86,732,400

3	921,200	—1,493,900	85,811,200	72	2,272,900	+	88,500	36,152,700	
4	619,000	—302,200	85,192,200	73	2,350,500	+	77,600	33,802,200	
5	486,100	—132,900	84,706,100	74	2,414,000	+	63,500	31,388,200	
6	382,000	—104,100	84,324,100	75	2,460,300	+	46,300	28,927,900	
7	309,000	—73,000	84,015,100	76	2,485,800	+	25,500	26,442,100	
8	253,200	—55,800	83,761,900	77	2,486,200	+	400	23,955,900	
9	213,000	—40,200	83,548,900	78	2,461,400	—	24,800	21,494,500	
10	186,300	—26,700	83,362,600	79	2,409,800	—	51,600	19,084,700	
11	170,900	—15,400	83,191,700	80	2,330,800	—	79,000	16,753,900	
12	165,000	—5,900	83,026,700	81	2,225,600	—	105,200	14,528,300	
13	167,900	+	2,900	82,858,800	82	2,095,300	—	130,300	12,433,000
14	178,500	+	10,600	82,680,300	83	1,943,500	—	151,800	10,489,500
15	195,500	+	17,000	82,484,800	84	1,773,900	—	169,600	8,715,600
16	217,800	+	22,300	82,267,000	85	1,591,500	—	182,400	7,124,100
17	247,300	+	29,500	82,019,700	86	1,402,200	—	189,300	5,721,900
18	273,500	+	26,200	81,746,200	87	1,211,400	—	190,800	4,510,500
19	289,400	+	15,900	81,456,800	88	1,025,300	—	186,100	3,485,200
20	300,000	+	10,600	81,156,800	89	848,800	—	176,500	2,636,400
21	314,800	+	14,800	80,842,000	90	686,700	—	162,100	1,949,700
22	332,400	+	17,600	80,509,600	91	542,000	—	144,700	1,407,700
23	348,400	+	16,000	80,161,200	92	416,900	—	125,100	990,800
24	359,600	+	11,200	79,801,600	93	311,900	—	105,000	678,900
25	366,800	+	7,200	79,434,800	94	226,700	—	95,200	452,200
26	373,700	+	6,900	79,061,100	95	159,900	—	66,800	292,300
27	379,400	+	5,700	78,681,700	96	109,300	—	50,600	183,000
28	383,600	+	4,200	78,298,100	97	72,100	—	37,200	110,900
29	387,300	+	3,700	77,910,800	98	46,000	—	26,100	64,900
30	392,100	+	4,800	77,518,700	99	28,300	—	17,700	36,600
31	398,500	+	6,400	77,120,200	100	16,700	—	11,600	19,900
32	407,000	+	9,500	76,713,200	101	9,600	—	7,100	10,300
33	417,400	+	10,400	76,295,800	102	5,100	—	4,500	5,200
34	428,900	+	11,500	75,866,900	103	2,700	—	2,400	2,500
35	440,400	+	11,500	75,426,500	104	1,400	—	1,300	1,100
36	451,900	+	11,500	74,974,600	105	600	—	800	500
37	465,100	+	13,200	74,509,500	106	300	—	300	200
38	480,100	+	15,000	74,029,400	107	100	—	200	100
39	495,500	+	15,400	73,533,900	108	100		None	None
40	510,300	+	14,800	73,023,600					
41	523,600	+	13,300	72,500,000					
42	536,300	+	12,700	71,963,700					
43	548,600	+	12,300	71,415,100					
44	562,300	+	13,700	70,852,800					
45	579,000	+	16,700	70,273,800					
46	600,100	+	21,100	69,673,700					
47	627,200	+	27,100	69,046,500					
48	658,900	+	31,700	68,387,600					
49	692,300	+	33,400	67,695,300					
50	725,400	+	33,100	66,969,900					
51	757,200	+	31,800	66,212,700					
52	788,500	+	31,300	65,424,200					
53	820,900	+	32,400	64,603,300					
54	857,300	+	36,400	63,746,000					
55	900,900	+	43,600	62,845,100					
56	955,000	+	55,100	61,890,100					
57	1,023,700	+	68,700	60,866,400					
58	1,101,400	+	77,700	59,765,000					
59	1,181,300	+	79,900	58,583,700					
60	1,256,700	+	75,400	57,327,000					
61	1,325,300	+	68,600	56,001,700					
62	1,388,400	+	63,100	54,613,300					
63	1,450,400	+	62,000	53,162,900					
64	1,517,700	+	67,300	51,645,200					
65	1,596,600	+	78,900	50,048,600					
66	1,688,300	+	91,700	48,360,300					
67	1,786,100	+	97,800	46,574,200					
68	1,887,000	+	100,900	44,687,200					
69	1,988,500	+	101,500	42,698,700					
70	2,088,700	+	100,200	40,610,000					
71	2,184,400	+	95,700	38,425,600					

Certain general suggestions shown by a glance at the table at once spring to perception. Fate knocks at the entrance door of life as ominously as at that of Beethoven's Fifth Symphony. Nearly 11 of the 100 million babies born die the first year of life, leaving some 89 million survivors, to be reduced to 86,832,400 during the next year.¹ The rate of decrease of the slaughter of the innocents is lessened until in the twelfth year the minimum is reached, and the long struggle for life thenceforth becomes on the whole more and more a losing one until the age of 77. Even the second year's losses are not equalled until at the age of 75. The twelfth year of life is the

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healthiest, the highest dynamometric point, with 83 million survivors left. This therefore is the true starting point of life; a second, "the second wind" for the race of life, is at 21, when the conquering of the loss at the turning point of 12 reaches its neutralizing double. The real life of work and maturity is between 21 and 35, the losses at 45 becoming markedly greater; here senility, (a needless senility), suddenly appears in the greater number, relatively, of deaths. One is immediately struck with the facts that these demarking points, 12, 21, 45 and 77, coincide with wonderful accuracy to certain salient physiologic, statutory, military, and experimental bounds established unconsciously of the mortality table. At about 12 begins the age of puberty, at 21 that of adulthood, exercise of right to suffrage, etc., and that of 45 as the limit of age for army enlistment. The table suggests that under present conditions the 77th year commences approximately the normally terminal period; the rest is dependence and protracted death. But how many, practically dead, still live on, after 45 or 50! The allotted length of life, the proverbial "Three score years and ten," was in accord with the experience of those living when life was generally of shorter duration than in the English "Healthy-Districts" of to-day. Sin and needless disease made it so, and if these two enemies of life are further withstood, the normal of 77 years as the right duration of life will be greatly extended.

The realistic tragicomedy of life seems therefore to consist of three acts, with a prologue, and an epilogue; the first act is Adolescence, from 12 to 21; the second, Adulthood, to 45; the third from 45 to 77,

not to be named by a single word, the characteristics varied, mixed, and dependent upon the history, histrionic ability, and "cast" of the individual actor. Fate by no means wrote or dictated the play, and the cast, even in the third act, with strange undramatic unconcern, is also left to the choice and improvisation of the actors themselves. The "plot" is consequently not always to be recognized; the "dramatic unities" are certainly ignored; whether the spectator laughs or weeps, whether he is edified, or grieved, or only mystified, depends largely upon his crippling by needless senescence.

Despite the shocking loss of life in the first two or three years of life, three-fourths of all born still survive at 36 years of age, one-half at 65, and only at 75 have three-fourths died. Beginning at the age of 83, 25 years are required for as many to die as die the first year of life. Such things show how needless is most senility. Genuine and compelled senility need not begin before 77.

While death is always at work each year during life he is more or less successfully withstood in different periods, so that the relative losses and gains have certain interesting and suggestive rhythms. From the beginning life's battle against death is continuously successful, sharply so at first, decreasingly so toward 12 years of age, until at 13 life's conflict is turned from a relatively progressive victory to the beginning of a long and stubbornly contested defeat. Although each year's survivors are, of course, fatally less in number they continue valorously to "hold the fort," with varying success, up to 77 years. The 24 million of survivors at 77 are exactly as successful as the 83 millions were at 12. I have added to the table a column of these

annual rhythms—annual accelerations and retardations of life-loss—not existing in the usual mortality tables and charts, but which seems to be of striking suggestiveness and interest. If the most comprehensive and illuminating law of evolution is that “the ontogeny repeats the phylogeny,” we have in this column a sort of epitome of the historic day-by-day struggle of the human race itself against death. There are three great rhythms which stand out clear: in the first, the havoc of death in life’s forces is quickly reduced to a minimum at 12 years of age, so that at 13 there is a lessened loss over the previous year of about 3,000 lives. Never again is the rate of annual loss reduced to comparative zero until the age of 77, when the battle once more becomes of rapidly increasing annual rates of losses, until 87, whence by decreasing rates the survivors are at 107 or 108 reduced from +186,000, to absolute zero.

But the annual and period variations of the decreases from 12 years of age through to, say, 64, are worth the most attentive scrutiny. Death gains rapidly until about 17, when he kills about 29,000 more than during the 16th year, a rate of increase which he never reaches again until the 47th year. Life checks the high rate of slaughter now for six years, with little variation until 54, etc., etc. Only by a scrutinizing study of the table of annual variations in the losses may we learn what are the weak places wherein the nation is losing too rapidly; by the retardations of annual life-losses in the same table we may judge what are the sources of the strengths to be encouraged, and upon which we may rely. This column insistently asks why the battle shows enormous gains in the rate of losses until 12, great

losses up to 19, uniformity from 24 to 32, rapid losses beginning at 45, etc.

It is the recognition of these finest variations of the annual death-rate, the fixing them individually in the mind, the study of their causes, their national, state, urban, and country differences—these and more—that are needed. The quinquennial period reports should be abolished, nay, not even the yearly ones will suffice when the matter is taken up from the standpoint of earnest hygiene and preventive medicine. The items should be at least by months, the tables of females and males separated, and a hundred scrutinies and refinements now neglected, caught and recorded in the census-takings. The charts should be made with the supremest art of the engraver, refined to the notation of the possible and ascertainable minimal differences; these may then be enlarged a hundred times so that the slightest variations may strike the eye and call for explanation and the search for causes. The scientific statistician, the hygienist, and the clinical physician, may thus finally be able to unite their investigations of the true, distant, and concealed causes of death. Without such methods never can the sole significance of statistics—the prevention of needless mortality and morbidity—be seriously and successfully realized.

The time in life when the chief lethal diseases give their death-blows will be of far greater service when the mortality tables are a hundred times more accurate than now. There can be no adequate prevention and safeguarding unless we know at what time the blow may come out of the dark. We know little about the enemy himself, or about his weapons; but we may in time, if we wish, learn when he will kill us and how long we may live after

the death-stroke has been delivered. Why, for instance are the deaths from typhoid fever (registration area, U. S., 1903-1907) of males, 10-14 years, 1,743; 15-19 years, 4,067; 20-24 years, 6,145; and then steadily decrease to the end? Why do those from measles, meningitis and diphtheria sharply and regularly decline from childhood on? Those from dysentery as uniformly increase to the maximum number at 80 years? Those from pulmonary tuberculosis are almost uniformly highly lethal in the years from 20 to 40, then regularly lessen. Of all diseases the greatest uniformity in the number of deaths is found to be due to "rheumatism," from 5 to 80 years. Why? It is easier to see why the deaths from "diseases of the arteries," "apoplexy" and "paralysis" rise, step by step, from 15 years to 80, but the exactly parallel rise in those from "acute bronchitis," "endocarditis," "angina pectoris" and "heart diseases" is at present less readily understood. Sharper questioning is required to explain the regularly progressive number of deaths from cancer from 10 to 70 years of age, and hardly a hint of explanation exists as to the very similar figures of diabetes.

Here, then, are 16 of the chief death-dealing diseases, and, the deaths from five, viz.: typhoid, measles, diphtheria, phthisis, meningitis, are decreasing from 40 to 65. In those of nine others, diabetes, cancer, bronchitis, arteritis, angina, carditis, paralysis, apoplexy, and dysentery, there is only a slow and illogical increase in the same years. In one, rheumatism, the figures vary little at any time of life. Referring now to our tables of the total number of deaths in 100 million born, we find that while there are about 600,000 deaths at 47 years of age, at 57 there are a mil-

lion, at 67 there are over one and a half million, and at 77 two and a half millions. To contrast these two, and correlated series of facts, to explain their glaring illogicalities, and finally to translate their lessons into the beneficence of prevention, will tax the energies of statistical bureaus and of the philanthropic for many coming years. A small part of the money annually wasted upon foolish dreadnoughts and war-preparations, a dozen or more millions of it at least, should be devoted to an annual, somewhat exact, at least partially scientific census-taking. A little serious intellect and resolve, backed by sufficient money would soon tell us something about when and why sickness and death attack us.

Another object of this paper is to indicate another unknown or neglected truth: On the average, two years of illness, says the world's greatest vital statistician, are endured by the living for each death. In a double sense this is the heart and soul of the whole matter: Sickness precedes, leads to, and causes death, and death has little significance to the community except as regards its needlessness and prematureness, and except it points to the causes of death in the certainly needless sickness. To the man of good head and good heart all problems of mortality finally resolve themselves into problems of morbidity.

As pertaining to the two years of illness for each death, one may, for instance, note that the ten or eleven million babies who die during the first year could not have suffered for two years, unless their life is counted as beginning long before birth. Thus there are at least ten or fifteen million of sick-years to be carried forward into the lives of the survivors, for expiation by them. Many such inferences suggest themselves as to the ages and life-periods

during which the two years of unproductivity and suffering must be borne.

A third intimation at this point commences to become manifest, consisting in the fact that the times of the two sick-years for each death are comparatively unknown and undated¹. There are, in fact, no morbidity-tables of any great value, and thus the desirable significance and values of the death-tables disappear in thin air of inconclusion and ineffectuality. Although living longer, women suffer more illness than men. Childhood and youth, as we all know, and early adult life, are far more healthy than the later years. Very many have little or no incapacitating illness until after 40, and there are quite a number who in old age have been uniformly well all their lives. The great sources of sudden, or short-sickness deaths, have been due to infectious diseases, and it is the everlasting honor of preventive medicine to have almost banished these from the civilized world. It is thus clear that a certain number have far more than their allotted share of two years of sickness, and equally certain that the vastly greater portion of the 200 millions of sick-years of the coming generation, will be the lot of only a part of those beyond 45 years of age. Medicine and hygiene and benevolence

must therefore fix the sharpest intellect upon this morbidity-engima, and especially upon these late years of chronic invalidism. When this is done will come the solution of a problem fully as important as that of the eradication of the infectious diseases. Very largely, when tackled earnestly, it will be found that the remaining or non-infectious diseases which finally result in death have their inception early or farther back than is supposed. They are subtle, and slow, and seemingly disconnected with the terminal diseases. This is because their true causes are long precedent functional diseases, and the organic diseases which are given in the death-certificates, if correctly diagnosed, are the mere innocent executioners. This shows the appalling blunder of all the causes-of-death statistics, one of incomparable and amazing significance, lying at the very door of medicine. It is only the violently infectious diseases which kill suddenly, not the so-called organic diseases, and more certainly not the functional diseases which cause the organic ones.

But with this discriminating rule many further discriminations are necessary. Among so-called infectious diseases there are all degrees of infectiousness, and all degrees of lethality, and all degrees of chronicity of the sickness. They may no longer be unscientifically shoveled off into one indiscriminate mass. As a rule the most lethal, as the "plagues," rabies, cerebrospinal meningitis, typhoid fever, etc., have the shortest precedent illness. Then there come the diseases with doubtful or partial infectiousness and lethality and with more indefinite duration of illness. These are at the present time the most important of all the "organic" diseases, (better called pseudoinfectious), those, namely, in which

¹A bit of confirmatory proof, with several pointing index fingers, is partially seen in the following table: -

WAGE LOSS ON ACCOUNT OF ILLNESS.

(Injuries excepted.)

Frankfurter Krankenkasse,
per 100 members.

	Males.	Females.
Under 15.....	31.9	36.1
15-20.....	27.5	36.5
20-30.....	27.5	36.0
30-40.....	35.3	44.8
40-50.....	43.5	37.7
50-60.....	53.2	44.7
Over 60.....	50.0	56.6
Average	31.8	37.7

the infectiousness and lethality are almost negligible, because of other factors sadly neglected, such as functionality of ultimate origins, length of the illness, curability, impossibility of complete extinction of the so-called infectious germs, etc. Such diseases are cancer, and pulmonary tuberculosis. Thousands of women are today slowly and fatally dying because of the neglect of the perfectly demonstrated truth that the beginnings of cancer were at one time eradicable. And this while the laboratories are frenzied in their search for serums curative of a disease that is far from certainly due to infectious germs. The true and far origins of pulmonary tuberculosis in functional and unhygienic conditions are neglected; ignored also are the prevention and curability of the disease (especially for the poor) by other measures than rest, impossible hospital sanitarium-life, milk-and-eggs, and sleeping out-of-doors in snow and rain, and all the rest. One cannot forget that rabies increases according to the fashionableness of Pasteur Institutes, while in countries where the institutes are unknown rabies is also unknown.

Discriminate! The time for "bug-craziness" is long past. The honor of discovering the nature and causes of the pronounced infectious diseases, is now almost or quite equalled by the dishonor of indiscrimination, and of ignoring the role of functional diseases. Even as pertains to the infections there are two elements: The incident of the seed, and the accident of the soil; the accident is nowadays as much underrated as the incident is exaggerated.

But far and away greater is the shame of the lethargy and blindness which lead to the astonishing neglect of the maleficent

roles of the functional diseases in the production of illness, incapacity, and even of the organic and lethal diseases. Except the suicide and a few others, every natural man fights death; to fight the diseases which directly cause death is only a step higher in the scale of common sense; but to fight the *causa causans*, the diseases which cause the terminal diseases—this, strangely is the dream of ineffectual benevolence; because the prevention of the functional diseases which fatally end in the lethal diseases requires a grade of intellect still conspicuous by its absence. Rich men do not found institutions for such things, and pathology does not advise them to do so. That supremely desirable fashion has not yet set in, nor, one fears, is it likely soon to do so.

In a double sense, therefore, pathology is pathological—i. e., in its method and in its material. What is needed is that it should become physiological, that is, it should seek by physiological methods to study the functional origins of disease. For, as all know, yet ignore, disease is, in origin, simply malfunction, or aberrant physiology. Pathology has been based upon and won its merited honor by presupposing that disease is an incoming source of disturbance of the organism from without. But true as that is as regards some diseases, it is untrue of others. The worst and most calamitous diseases at present afflicting civilized people are autogenetic, those developing within the organism, or as dependent, if not more so, upon indigenous weakness as upon the seeding from without. Functional diseases, it is said, do not kill. On the contrary! They do kill, and in three ways—when kept up long enough by wearing out vital and resisting power;

by suicide; by preparing the necessary soil for the incoming of the infectious and terminal diseases.

When pathology seriously undertakes the investigation of pathogenesis, when it leaves the end-products and the post-mortem table in order to study aberrant living functions and morbidizing habits, then will spring to view the startling fact that the mortality table is of little direct use, is only suggestive, is good chiefly for starting working hypotheses. It will at last be recognized that pathology has too long been deaf and blind to the most important of all pathogenic facts, facts repeatedly called to its attention, facts unseen yet glaringly before the eyes of every physician.

The final object of this writing is to re-emphasize two such facts—briefly, to be sure, because, for the present times, uselessly: 1. Unphysiological function of the visual organs produces morbidity of all the functions dependant upon seeing—in varying degrees, and as a rule—and there is hardly a function of the human body or mind that is not, directly or indirectly, more or less governed by vision. Either continuously, or at some period of life, every one has pathologic vision. 2. At least 83.5 per cent of all school-bred youth and adults have permanent and continuous pathologic function of the single support of the erect body-trunk, the spinal column—i. e., they have either functional or grossly organic lateral curvature of the vertebral column. But functional diseases do not interest the pathologist, and this, the most gross of glaring organic deformities is not seen because the living nude human body is never examined.

The causes of a hundred kinds of "migraine," the causes of epilepsy, of the

"despondency" and "ill-health" of suicides, of insanity, of much homicide and other crimes, of senility, of a myriad of unnamed diseases—these and more, are confessedly and frankly unknown and unsought by professional "leaders," and by official and laboratory pathology. For much or for the most part these diseases will finally be recognized as due directly or indirectly to eyestrain and backstrain. These two diseases are the only ones in modern life (and they are created by civilization itself), which demand the continuous innervation and contraction and strain of muscles and exhaustion of nerve-centers. Such an uninterrupted innervation is impossible by any device or power of the physiological mechanism; if too malignantly demanded there is certain rebellion, exhaustion, and disease. To avoid these pernicious results has arisen much of the appalling vogue of militarism, "sport," the drunkenness of "athleticism," the frivolity of fashionable life, of clubdom, the criminal wastes by luxury, and the ill-omened rest-cures, hysterias, etc., habitualized and forgotten in institutionalisms, even the ludicrous scape-valves and riot of faith-cures, eddyisms, and crass faddisms beyond nausea and counting. And the end is not yet, for there is a mania of surgery: Innocent nerves are wrenched and torn out, kidneys peeled, "decompression operations," gastrotomies, nasal operations, etc., etc., ignorantly done, for diseases directly caused by eyestrain. Dr. Robert Morris finds abdominal surgery often unnecessary because the abdominal diseases may be cured by the capable oculist. A great medical journal advises gastrotomy in every case of obscure functional gastric disease, yet at the same time two powerful general physicians, professors of medicine too, aver that

even decided gastric diseases are caused by eyestrain.

The mortality table demonstrates that at 45 begins a rapid rise in the number of deaths. One thing is beyond question: the ancient superstition that this is due to the menopause, (which happens some years later) is indeed a superstition — a genuine result of professional "hysteria"; it has nothing whatever to do with it. Presbyopia, however, and the consequences of curved spinal columns have perhaps everything to do with it. Thousands of suicides, at this period, add to the list and a large portion also spring from presbyopia.¹ Beginning at the age of 45 there are in a few years over 100,000 more annual deaths found in the table, and at 60 years nearly 700,000 are again soon added. At 70 it is reduced to a standstill, when a decreasing rate of loss is instituted. All of which means that several millions of otherwise healthy people have been murdered by negligence of the effects of diseased vision and diseased vertebral columns. That at 77 there are still 24,000,000 survivors bears incontrovertible witness to the fact that just prior to that time senility with its sicknesses and invalidisms are largely unnecessary. Plainly, a new philosophy of senility is required. The writing of learned books of nonsense upon the subject of senility should have an ending. It is itself a product of scientific senility. An intelligent glance at the reconstructed death-table would have avoided the absurdity. It may be good "science" but it is not good humanitarianism to spend our energies in the hoped-for cure of a few cases of, e. g., cerebrospinal meningitis,

when the slaughter of millions by other diseases might be easily prevented.¹

Long waiting, long gathered, the long unfulfilled two years of deferred illness for each death, begin now at 45 to find their victims. They have multiplied enormously of late, these sanitariums without *sanitas*, homes that are most unhomelike, asylums that are anything but *asyla*, penitentiaries where the penitent would be cursed by his fellows, colonies where prevention and pathogenesis are unsought. Thousands of such institutions are filled with patients over 44 years of age, the life-wrecks of long battling against resisted functional disease. Vainly, for the most part, do these "hysterics," "neurasthenics," "psychasthenics," "over-worked," "over-drugged," "over-cured," "over-surgicalized," chronic invalids, melancholics, the subjects of psychical autotoxemia, the luxury-pampered, or the impoverished—vainly do they seek relief from suffering, once curable, now at last the victims of secondary and incurable organic diseases. Why, at 45, do the annual increases in the number of deaths mount rapidly and unchecked to 69, decrease then, to 77, rise again furiously to 87, requiring thence 20 years to reach absolute zero? Only the clinician, doubled by the hygienist, can, when desired, explain a hundred such problems.

The greatest disease, the greatest begetter of diseases, *Disease Anno Domini*—Senility,—during which the vast majority of the deferred years of illness gather, is, by all odds due to eyestrain, plus its result or concomitant, backstrain. When recognized, this fact will bring a revolution in the mortality tables, in human life, and

¹See "*The Mysteries and Sources of Suicide*," *Biographic Clinics*, vol. V., p. 183.

¹See "*Vision and Senility*," *Biographic Clinics*, vol. VI., p. 249.

ophthalmology. For, as a rule, what is called senility is premature and unnecessary senility,—an ophthalmological blunder, worked out in terms of actual illness and death.

THE RECENT WAR MANOEUVRES IN MASSACHUSETTS FROM A MEDICAL OFFICER'S POINT OF VIEW.¹

BY

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The War Department has of recent years been endeavoring to bring into closer relations the organized militia of the several states and the Regular Army, and one of the methods adopted to obtain this end, has been the institution of annual encampments of such of these troops as were feasible to carry out certain kinds of practical field work, and joining with them as numerous a force of the regular establishment as possible. These field operations have been held in different parts of the country, the last of such encampments being at Pine Plains in the upper part of New York State, where a permanent force of some ten thousand troops of the Army and National Guard from the adjoining states were exercised together for several weeks. This was during the early summer of 1908, the militia organizations changing every eight or nine days for troops from other states. The benefit derived from this kind of work, under the supervision of able army officers, has been of great value to the guardsmen, and also to these army officers, who thus were given the opportunity of commanding large bodies of men,

an impossibility in the army itself which is not large and is widely scattered over our vast territory and insular possessions. These encampments instituted by the government have been styled by some "manoeuvres," but wrongly in the broad sense, as the troops were simply ordered out of the permanent camp each day to carry out some special point of field operations, which being finished they were then marched back to their quarters. Last year, however, the military authorities in the Department of the East, commanded by Major-General Leonard Wood, decided to try the experiment of a real war game or manoeuvres on a scale never attempted or undertaken in this country before.

To this end, disposition was made to employ some 20,000 troops of all branches of the service to carry out the proposed field work and solve the following military problem: namely whether or not it would be possible for a foreign foe after landing a strong force on the coast of New England, to capture the City of Boston from the rear, or land defenses? This being the main issue, certain conditions, establishing a *status quo* in the supposed period of warfare, had to be taken for granted, and the conditions imposed were as follows: The American North Atlantic fleet had, after a severe battle off the coast of New England with the foreign fleet, been practically defeated and destroyed, only a few lighter cruisers, etc., being saved by their superior speed, and were at present shut up inside the harbors along the coast. This naval victory gave the foe the sought-for opportunity for landing troops from the transports which were being convoyed by his victorious battleship fleet. Meanwhile the Uni-

¹Read before the Hospital Graduates' Club, of New York, February 24th, 1910.

ted States government foreseeing this as an inevitable movement on the part of the enemy, was rapidly mobilizing the American Armies at Albany, N. Y., while endeavoring to hold the New England States with a force comprising the only available troops they could use for this purpose. Ascertaining through its scout-cruisers and other means that the enemy would land his forces in one of the southern New England harbors with the evident intention of capturing the city of Boston on account of its strategic importance, the government had massed its available forces to the west and south of the city, and there awaited the outcome of the pending conflict. The American line of defense of Boston was represented by the entire mobilized Massachusetts State Guard under command of Gen. Pew of that State. The invading force was made up of some ten thousand troops from the District of Columbia, New Jersey, New York and Connecticut, to which was added the 10th U. S. Cavalry, consisting of 10 troops but recently returned from the Philippines. For the purpose of distinguishing between the two contending armies, the invading forces wore a wide red band around their hats, the American or defending army, a blue band. No national or regimental flags were carried by either side, the headquarters of each being designated by one large flag of either color.

For the purposes of a war game of this kind certain rules have to be established to be strictly adhered to by each side, and to enforce such rules "umpires" are attached to each body of troops, and accompany them always on the march and in action. These umpires, all officers of the regular army, were distinguished by a broad

white band around their hats. They rule troops out of action as killed or captured as the case may be, and really take the place of bullets. They decide at once on the spot, if positions are captured, lost, etc., and keep a sharp lookout all the time to see that no infraction of the rules of the game takes place. They make their reports to the Government later on, and on these the issue is finally decided by a board appointed for that purpose. Newspaper correspondents were limited in numbers in the attacking forces, and were obliged to obtain permits from headquarters, Department of the East, each permit being numbered to correspond with the number on a broad red band worn constantly on the right arm above the elbow.

Neither steam nor electric railroads were to be used for the transportation of troops after midnight August 14th. After midnight August 13th, all telegraph and telephone lines were considered destroyed and both belligerents restricted to the use of those means of communication which actually accompany the respective forces at the opening of the campaign, or which may be secured subsequently to replace defective or broken paraphernalia.

The getting of information by spies, civilians, or members of the contending forces, *not in uniform*, beyond the lines was absolutely forbidden, as being, under the circumstances, inconsistent with the conditions of simulated warfare. These limitations as to securing information were rendered necessary by the fact that in these exercises it was impracticable to interrupt traffic, cut the telephone or telegraph lines, or to interfere with the freedom of movement or right of travel of the inhabitants of occupied territory, as would be the case in actual hostilities.

The troops composing the Red Army, or attacking forces were embarked on transports, on the 13th of August, and when at sea the commanding officers ascertained, on opening their sealed orders, that they should all assemble in the harbor of New Bedford, Mass., and there land their commands, the day following, August 14th. The brigade from this State consisted of the 7th and 14th Infantry, the 22nd Engineers, 3 batteries of Artillery, Squadron "A" cavalry, and the 1st and 2nd companies Signal Corps, mounted. They were transported on the steamers "Puritan" and "Pilgrim." Army transport ships were used to convey the rest of the Red Army.

The 14th day of August saw all these vessels at anchor off the City of New Bedford supposedly protected by war ships of their fleet. The invaders were promptly landed, and the first phase of the war on land had begun.

It is not my purpose in a paper of this kind to go into too intricate a relation of the military part of these manoeuvres. I shall only attempt to give you a brief outline of this part of the game itself, and a rough sketch of the movements of the army as a whole. In order to get a fair picture in your minds of the topography of territory where these field operations took place along the coast of Eastern Massachusetts, you can think of the letter "T"; the horizontal line of this letter representing the "Blue" army lying just south of Boston, and extending some 50 miles in length from the coast westwardly; the vertical line of the "T" consisting of a long chain of lakes and reaching almost to New Bedford, the point seized by the Red Army as a military base. To the west of these lakes, some 25 miles N. W. of New Bedford lies the important manu-

facturing town of Taunton, and this together with the fact that the roads on this western side of the lake country were much better for moving troops, made it seem likely to the "Blues" that the enemy's expeditioning force would advance on the west, take Taunton and force the right wing of the "Blue" Army, which would then confront them. Gen. Bliss commanding the Red Army, advanced his troops rapidly to the northwest of New Bedford, occupying Acushnet station and sending his cavalry as a screen well up towards Taunton. This was on the 14th. The following day, his advance was also in that same direction, and some infantry was sent up to support the cavalry towards Taunton, to still further deceive the "Blues" as to his intention. We bivouacked that night near East Freetown. The following morning the Red Army swung suddenly and quickly through the lake country by forced marching to the east and lay near Rock station for the night. This move was rapidly and skilfully accomplished, in one of the hardest rains I ever witnessed, and which added greatly to the harrassing features of the movement. The next day, the 17th, the "Reds" were advanced, over the most awful roads, deep with mud and sand, in the soaking rain, in a rapid march due north, and about noon we struck the advance guard of the "Blues" near Eddyville and pushed them back on the left wing of their army. The 18th brought heavy skirmishing the entire day, as the "Reds" advanced, rolling back the "Blues" outlying screens. The 5th Massachusetts was defeated at this point and its headquarters captured near north Plympton. In the meantime the "Blues" commanding officer, Gen. Pew, was endeavoring with might and main to strengthen his

threatened left by rapidly marching troops from his right to its support, on finding that the main attack of the advancing enemy would not be from Taunton, as he supposed. But Gen. Bliss completely outmanoeuvred him in his rapid advance and the day following, the 19th, hurled the entire Red Army on the main left wing of the Blues at Hanover Four Corners. This was the decisive battle of the war. The Blues made a gallant defense and Gen. Pew made frantic endeavors to rush his troops from his right wing and strengthen his lines. But the Red Army broke through and rolled up the entire left of the Blue Army and occupied the direct roads into Boston, which then lay at the mercy of the conquerors. This action at "Four Corners" ended the war game and solved the problem. The official decision has not yet been published by the War Department, but there is not much doubt as to what it will be.

This little description may give you, I hope, some idea of such a military war game as this, and demonstrate that it is not such an easy proposition as one would think from the casual notice we see in newspapers. It entails an enormous amount of hard work in its preparation, and likewise in the carrying out of the game itself. Then too is the moving and assembling of some ten thousand troops from different parts of the country, their feeding and maintenance, which is no easy task.

Some remarks here as to the duties of medical officers in the field, on campaign, etc., may possibly interest you as, of course, only those who have had actual experience of this kind in the service can properly appreciate the vast difference be-

tween the conditions surrounding the work of the medical man in military and civil practice.

The ancient impression that the military surgeon's chief occupation consisted in caring for sick and wounded soldiers, is pretty well disposed of to-day. Even the title "Surgeon" has been practically dropped officially, and he is called a medical officer, a name which more properly characterizes his occupation and duties. Chief among such is the detection and prevention of the diseases so prevalent when large bodies of men are closely quartered together, the sanitation of camps and troop ships, the personal hygiene of the soldier, his clothing, equipment, food, etc., all of which affect his efficiency and ability to perform the service for which he is called into the field.

To quote from the work of a well known author (*The Theory and Practice of Military Hygiene*, by E. L. Nuneen, A. M., M. D., Med. Corps, U. S. A., Wm. Wood & Co., N. Y.).

"Armies suffer much less from wounds and deaths incurred in action than from disease, a fact which conclusively shows the necessity for a proper knowledge of military hygiene. The constant advance in sanitation, however, based upon an accurate knowledge of etiological factors, has exerted a marked effect in diminishing military morbidity and mortality; and while in the future comparatively high rates for sickness and death among troops engaged in war are always to be expected, disastrous epidemics as have prevailed in past times, seem scarcely possible of repetition. Wars become shorter, as they become through modern conditions more expensive, and troops, particularly in an aggressive and decisive campaign,

are not now exposed to such unhealthful influences as formerly, when hostilities were more prolonged. With improvement in the effectiveness of arms, both as regards range and rapidity of action, the proportion of casualty for any period must naturally be increased. Hence there is a constant tendency towards the approximation of the rates from wounds and disease." It would occupy too much space here to go into all the details of comparison in the many wars of which we have reliable statistics on the subject, but I will quote a few such to illustrate what I have just stated. For instance, in the Russian campaign against Turkey, in 1828, 80,000 men perished from disease and but 25,000 from wounds received in battle. In our war with Mexico in 1848, Gen. Scott lost 33% of the effective strength of his forces from disease alone. In the Crimean war, according to Laveran, the allies lost in six months 50,000 men from disease and but 2,000 from injuries in battle. The United States forces during the Civil War lost about 95,000 from injuries, while over 200,000 perished from disease. Such lamentable conditions have persisted even to our day in all armies, being undoubtedly due largely to ignorance of the first cause of disease as well as to imperfect knowledge concerning matters of general and personal hygiene and lack of appreciation of its value from a military standpoint.

Of no less importance in regard to this vital question was the practically absolute lack of authority in sanitary matters, of the medical officer, and therefore his inability to control or correct conditions. Recommendations from him, bearing on questions regarding the care and management of troops not actually sick, were disre-

garded and resented as impertinent and unnecessary. In recent years the medical officer has been given more authority in matters of sanitation and in questions concerning the general health of troops. The result has been most satisfactory and the general efficiency of the soldier has improved accordingly.

As a matter of actual fact, however, the medical officer has no authority to enforce his directions unless such be conferred on him by his commanding officer. This is an old controversy, whether medical officers should have actual authority in sanitary and hygienic matters or not. The regulations as now in force, confer no such powers on him, and we are inclined to believe that this is as it should be. Armies exist for a distinct purpose, i. e. for war, and this should always be borne in mind, and supersede any other considerations when the necessity arises, no matter how much these may conflict with sanitary rules and regulations, as would be advocated by medical men. A wise and able commander, however, will always seek for and follow the counsel of his staff officers in their special departments, and be willing to confer upon occasion absolute authority for carrying out measures to insure the health and welfare of his command.

As regards the prevalence of disease, it may be stated that the soldier differs in no respect from the civilian, but the exigencies of military life may conduce often to an extensive dissemination of infection in armies. Such diseases are results of an acute nature and zymotic due to infection, immorality, intemperance, extremes of temperature, food (often of poor quality) and irregular diet. These last mentioned factors are of course largely dependent on

the facilities of transportation. They occur, consequently, more among soldiers when in active service, than in garrison. Military service furthermore is productive of diseases, functional or organic, induced by the strain of military exigencies, transportation of the soldier's equipment, and the mental condition following severe campaigns, etc.

When a body of troops is ordered into the field for active service, for instance, as an expeditionary force, the medical officers accompanying it have many serious problems confronting them, and which call for much careful consideration. The amount of medical supplies has to be well calculated as only so much space and weight may be allowed. Of course, in the regular service, this is a matter of constant routine, but to the Medical Officer of the National Guard, who has other duties in life than his military ones, it becomes a source of considerable moment.

Besides the medical equipment, the officers of the medical corps have their own command, the Hospital Corps, to care for, with the necessary impedimenta, ambulances, wagons, horses, tents, etc.

In active service, with its hardships and vicissitudes, the medical officer is frequently thrown more or less on his own resources and devices for caring for the sick and injured, and it must often occur to him how with very little he can accomplish much.

The government provides a large and complete equipment of medical stores, but when ordered into the field, the transportation question is the most important one for the medical department, for owing to the antiquated system which still, unfortunately, exists in our army, all supplies, medical, commissary, etc., are transported

entirely by the quartermaster's department, and on the ability or good will may be, of some quartermaster the medical corps are dependent to get their equipment taken along. I may state here, that even the ambulances, in our army, are a part of the quartermaster's outfit, and are only detailed to the medical department on request. These problems could easily be solved, as they have been in the armies of other nations where each department has its own means of transportation. The confusion arising from the mixup which usually follows the employment of this unbusinesslike procedure is beyond words, and only those who have witnessed it can fully appreciate what it means.

It will be sufficient here, by way of illustration to recall the miserable tangle in the transportation of supplies to Cuba during the recent war with Spain, just prior to the battle of San Juan, and which resulted in the medical stores being placed in the holds of transports, buried beneath everything else and where they could not be reached. In consequence of this the troops went into action with no provision for medical treatment. The same confusion will occur every time extended field work, such as manoeuvres on a large scale, is undertaken, and will so continue as long as the present system obtains. In these manoeuvres last August, another illustration of this confusion was most marked. But of this I shall speak later.

As the subject of this paper deals more especially with the campaign, some remarks as to the march in campaign would appear appropriate as demonstrating more or less the medical officer's supervision, work and responsibilities to his commanding officer.

It will be evident, says Munson, that if the character of the march be so im-

prudently designed, in its length or detail, as to fatigue or harass troops, a commander will succeed in breaking down the strength and spirit of his soldiers; so that the more he marches and the nearer he approaches the enemy, the less fit he will be for the encounter. As far as possible, military restrictions of an unnecessary nature are to be avoided, since in marching at ease the ordinary journey is relieved of much of its harassing character, and becomes a salutary and stimulating exercise. To occupy the mind of the soldier on the march is an excellent way of preventing fatigue and weariness. Absolute silence is depressing to the men and should not be required. On dusty roads or at high altitude marching soldiers are instinctively silent. Singing affords a pleasant mental occupation, and helps much to lessen the tedium of the march. In the Russian and German armies certain soldiers are selected to lead the singing in their respective companies. In preparing for an active campaign march, the medical officer should see that all cases of slight illness or disability are carefully eliminated, and especially those of concealed or partially cured venereal diseases, as all these are practically certain to break down at an early date, and become an encumbrance to a marching column. Troops should never be marched fasting, unless absolute necessity calls for this sacrifice; for such action increases fatigue, lessens resistance, and breaks down the barriers against disease. We should not forget that the military marching step, as a means of locomotion is far more fatiguing than ordinary marching, since the movements of the soldiers are more or less hampered and constrained. The present method of marching compares unfavorably

with that advocated by de Raoul of the French army and which although previously unknown to civilized nations, has always been in use by the peoples of the Orient. In this step, the hips, knees and ankle-joint are slightly bent, the body is inclined forward and the feet placed on the ground with little emphasis. Experiments in France have repeatedly demonstrated that the fully equipped soldier, if trained in this step, can easily attain a rate of eight miles per hour. Marching in the rear of the column is comparatively much more fatiguing and disagreeable, and each senior organization should, in its turn, lead within its next higher command. As a general rule, but one which cannot always be carried out, however, infantry should never march with cavalry or artillery. They should preserve on the march as wide a front as possible, in order to avoid the deleterious effects of crowd poisoning.

Much more could be written on this subject from the standpoint of the medical officer. Exhaustion from too continuous effort is prevented, as far as possible, on the march, by halting the column at suitable intervals for a period of ten minutes, about every fifty minutes; in a hilly country, a breathing time of five minutes every 25 minutes should be allowed.

Troops should be cautioned against the too free drinking of water while marching, and advised to carry some small hard object in the mouth, such as a twig or pebble, to excite the flow of saliva.

A marching column is proverbially a healthy column, and barring foot soreness, usually shows a much smaller rate of sickness than when in camp. Blisters and excoriations of the feet, in themselves of no importance, possess a very considerable interest from a military point of view, as

they may rapidly render a large portion of men unfit for duty and this very considerably diminishes the effective force at the beginning of campaign. Military statistics show that from 25 to 30 per cent of troops in campaign, as the result of the first few days marching, sustain more or less injury to the feet. Under the best circumstances and with all precautions, constant marching must be expected early to render a considerable proportion of an infantry command unfit for duty. It thus becomes evident that care with regard to the feet of the infantry soldier is well recompensed by his increased efficiency. Cleanliness of the feet, the wearing of properly fitting socks and well constructed shoes, greasing of the feet, the use of foot powders, etc., are really of prime military necessity. The popular method among United States soldiers, is to thoroughly soap the feet before beginning the day's journey.

There are many questions about clothing, etc., to be worn by marching troops which although interesting from a medical standpoint, would occupy too much time to discuss here.

Sanitary preference in the selection of camp sites, must often yield to military necessity; but the extent to which the former may be disregarded is only to be measured by the exigencies of the military situation. Sanitary requirements under ordinary conditions should always govern. The advice here of the medical officer is of the utmost importance. The proper location of a camp demands intelligent and careful consideration. It should be selected as if for continued occupancy, since it may frequently happen that the intended bivouac, becomes through necessity, a camp of semi-permanent character. The *de-*

siderata in the selection of a camp site, from the standpoint of the line officer, are wood, water and grass. To these the medical officer will add dryness of soil and surroundings, elevation of site and protection from winds. The best of camp sites, however, will quickly be rendered unhealthful by inefficient policing and disregard of soil contamination. The preparation of the sinks at once upon the selection of a camp site is of prime importance, second only to that of guarding the water supply. A special detail is told off at once to attend to this duty under charge of a medical officer, and sentries placed over the water supply, to prevent contamination by men or animals.

The manoeuvres in August last brought out again prominently the well known and oft repeated experience that the strength of an army lies in the feet of its infantry. The general feeling of surprise, both among officers and men, which I so often heard expressed, that so many should suffer from sore feet, as if this was an unique experience, was unwarranted.

The condition of the men of the command to which the writer was assigned, as compared in many respects to that of other organizations, was excellent. This I cannot refrain from attributing to their greater attention to personal cleanliness and hygiene, and to practically a total abstinence from the use of alcoholic beverages; likewise to the very general wearing of good and serviceable shoes. I failed to notice but a very few cases where the foot gear was not suitable for marching purposes. But this, as I have stated, was among the men of my own organization. And even here I should say that probably 60% to 70% of the men were suffering from sore feet to a greater or less ex-

tent, and yet only nine were sent to the home station on account of the condition of their feet. All the rest of the command were always up to their work.

One of the greatest sources of impairment of military efficiency in a field force operating against the enemy is the habit of straggling from the column on the march. This may be the result of illness, or other physical conditions, laziness or from the lack of discipline on the part of company officers. Stragglers were seen in large numbers along the line of march at these August manoeuvres, men limping along the road with bare bloody feet, in stockings or bandages, or lying exhausted by the wayside. It was estimated that during the first few days of these manoeuvres, at least 2,000 out of 10,000 troops composing the Red Army, were stragglers. These men are either picked up or somehow managed to join their commands later on. As the campaign progresses the stragglers become fewer in numbers, as the men become hardened. Among all fresh and green troops the same thing is always seen in every army in the world. In my own regiment, as I have said before, practically every man's shoes were suitable for the work in hand, but among the troops from other sections, which the writer observed, there was a woeful lack of common sense displayed by many. In the long forced marches over muddy, heavy roads in the pouring rain, the soldier shod with unsuitable, light weight shoes, soon found himself in a pitiable plight. You should bear in mind that the shoes of the soldier have to stand an extra weight of 50 odd pounds, which the wearer is carrying on his back, all the more reason for his being properly shod. The regular soldier wears the U. S. army pat-

tern shoe, but the organized militia as a body do not.

There is another point to be considered here as bearing on this matter of sore feet in the marching soldier, and that is the question as to the advisability of his carrying an extra pair of shoes in his kit. The reduction of every ounce in weight in the kit is what many boards in many armies the world over are trying to solve. An extra pair of heavy shoes add greatly to the weight of the equipment. Medical officers, however, from their observations in the field, generally consider this extra pair of foot gear a practical necessity, and advise that troops in campaign should be so provided. An enlisted man in the infantry carries his magazine rifle, bayonet, scabbard, gun sling, cartridge belt and suspenders, 1st aid packet and pouch, canteen, haversack, meat can, cup, knife, fork and spoon, and his entrenching tools such as an axe, shovel, pick, etc. His field kit consisted by orders for these manoeuvres of his blanket pouched, 1 pair of socks, 1 towel, 1 undershirt, 1 pair of drawers, 1 comb, tooth brush, powder and soap, 1 shelter tent half, 1 shelter tent pole, 5 tent pieces. Each two men carried a mosquito bar. Dis-mounted troops carry this equipment on the person. Mounted troops on the horse or artillery cannon. Troops were ordered to these manoeuvres in flannel shirt and khaki breeches without coats or over coats and without extra shoes. The possession of and use of one pair of rain-soaked boggy shoes on blistered and sore feet was in a measure well calculated to disable many men and it was a surprise to observe how much and with what enthusiasm under such painful conditions these un-hardened troops of the organized militia actually accomplished.

The higher morals and *esprit*, discipline and training of the troops from this State of New York was in evidence everywhere when in contact with the troops of Connecticut or the District of Columbia.

The camp sites selected for each night's bivouac, were excellent both as to soil and drainage, and considering that the army was marching through a long settled and well peopled country, this was quite remarkable. The water supply was mostly adequate; but not always. This water question is always a very serious one in carrying out any military problems which involve the moving of large bodies of troops through the country. Men, when exhausted, overheated and depressed, will drink almost anything to quench their thirst. The ordinary country well, generally placed conveniently near the kitchen and cowshed in the rear, with often the local cemetery a few paces away, provides a good source for sickness in any army, and if a sentry be not placed in charge at once when a column of troops is passing, would be drained to the last drop in an incredibly short time. However, these matters were as well taken care of as we could reasonably expect. Water sources of a suspicious nature were promptly labelled undrinkable, dangerous, etc. I understand that but two cases of typhoid fever have developed since the return of these troops, both in the Connecticut brigade. It was a pleasure to observe the attention paid to the policing of the camps, both during and after each bivouac, and the intelligence used by the individual men in sanitary matters, both personal and general. It certainly speaks well for the intelligence of the modern enlisted men of the National Guard, and that is one of the great object lessons such manoeuvres

make possible, instruction of the individual soldier, both officer and man, in the care of his own person, and the insistence upon the same personal care on the part of his comrades.

Sanitation and hygiene in camps, etc., is simply a matter of a few common sense rules and the application of these is largely dependent on discipline and intelligence. American soldiers are often criticised by our own and foreign observers as careless and slovenly and also dirty, hard to discipline and control. This, however, is an injustice, for the fault lies usually with the officers in their lack of education in sanitary matters and their failure to properly instruct the men under their command. The American soldier is the most intelligent soldier in the world, and let him be once properly taught that attention to such matters not only insures his own good health, but that of his comrades, and such criticism will cease.

No account of these manoeuvres would be complete if it failed to refer to what amounted practically to almost a collapse of all staff departments. The means provided by the quartermaster's department for transporting commissary supplies, ammunition, etc., were so bad that no one who witnessed these long trains of ancient, unserviceable and inappropriate country carts, can repress a smile when he thinks of them. The immediate result of this management, of course, was a delay in the delivery of supplies of all kinds. The roads over which we marched were ornamented with broken down wagons, loaded with ammunition, and usually minus one or more wheels.

In regard to the medical department it may be said that, following orders as to what should be taken along from the home

station in the shape of supplies, etc., only a limited quantity of medical stores were carried by each organization.

The orders from headquarters, Department of the East, stated that each regiment would be provided with an ambulance and escort wagon, and such would be furnished at the point of debarkation. When we were landed at New Bedford, diligent search failed to find any ambulances or any other vehicles for the Medical Department. We were informed later on, that the train of ambulances provided by the government for these manoeuvres had been held up in Providence for speeding! This was all we ever saw of them, but I have heard since that when eventually released from custody they were utilized by the quartermaster's department.

On the 2nd or 3rd an electric ambulance in command of a medical officer of the regular service turned up, looking for any sick we might have to transport to the Field Hospital. This Field Hospital of 30 beds, came from the District of Columbia, and after many delays, due to lack of transportation facilities, finally put in an appearance. Whether it ever came along with the advancing army I am unable to say, for its commanding officer told me he had only some coal carts allowed him for conveying his entire hospital and medical supplies! The electric ambulance, referred to above, made daily trips from the front to the military base, New Bedford, conveying the sick to the transport "Kilpatrick" on which was a fine hospital with ample accommodations. This was the sole provision made by the army authorities for the Medical Department! As this front was moving each day farther away from the base and covered a stretch of territory or some thirty to forty odd miles in extent,

the problem of collecting the sick from every organization in one single ambulance became more and more difficult, especially as the troops moved out from their bivouacs about four o'clock in the mornings. The delay not only in collecting the sick, but in their transportation over rough, heavy country roads in the pouring rain to New Bedford, was deplorable.

But all these little incidentals, although meaning much at the time, seem to be forgotten eventually in our American way of doing things! The principal thing is to "get there." A dilapidated baker's wagon was hired as a makeshift ambulance, and in this affair the sick were transported on the march. It was a gloomy enough picture at the time, and I have no doubt is still a mournful memory to those who were packed into it. It certainly made a very unimposing appearance, and the recollection of it is painful.

I have not spoken here of any of the personal problems which the medical officer in the field has to solve, as they differ in no way from those of his comrades. He shares the same vicissitudes and hardships as they do, sleeps in a little dog tent with his saddle for a pillow, in the rain and mud, just as they do, freezes and goes hungry, and is exposed to all the dangers and exigencies of the campaign like every other soldier. But after all it is healthy, exhilarating outdoor life, and like everything else, has many pleasing features, with comrades good and true, and long after one leaves the service he will certainly enjoy thinking over the days when he wore the uniform of Uncle Sam, and served under 'Old Glory.'

115 E. 35th St., N. Y.

HYPERTRICHOSIS OR HIRSUTIS.

BY

A. C. GEYSER, M. D.,
New York City.

The causes for an overgrowth of hair are so varied that no real one cause can be assigned. It is of course as common in men as it is in women, but it is only in the latter that we are called upon to treat this condition. I have seen this condition in all ages, blonds as well as brunettes and all parts of the body. The face, forearms and the back of the hands and fingers are the locations where this overgrowth of hair becomes the greatest source of annoyance, although I have upon one occasion been obliged to remove all the hairs from the entire extensor surface of the lower limbs before a young woman patient would consent to marriage.

Treatment: When the hairs are few and of a rather strong growth electrolysis is the choice of methods. The region if in a brunette requires little or no preparation, but if as frequently happens the patient is a blond, then before starting the operation the field must be prepared. Secure a candle or in its absence a wooden match or two will answer the purpose, the candle or the match is lighted and held closely to the under-surface of a porcelain saucer allowing lampblack to form upon the porcelain. When a sufficient amount has accumulated a drop of olive oil, liquid vaseline or similar fatty substance is mixed with the lampblack. This mixture is then thoroughly rubbed into the region about to be treated for one or two minutes, then wiped off with a piece of absorbent cotton. Every hair in its follicle will now be surrounded by an accumulation of this lampblack so that the operator does not strain

his eyes, neither is he obliged to make use of magnifying glasses.

The positive pole of the galvanic current is attached to a large pad electrode and applied at any nearby convenient location; always bearing in mind to locate the two poles as near each other as is practical so as to have as little resistance to overcome as possible.

It requires voltage to overcome resistance and every unnecessary volt used increases the pain, while it only requires a certain amount of milliamperage to do the work. The negative pole is attached to a needle holder and a very fine steel brouche purposely made for this work. In the absence of such a steel brouche a very fine cambric needle will answer the purpose. Insert the needle for about one-eighth to one-sixteenth of an inch into the follicle, now gradually turn on the current through the rheostat to a point of tolerance which will be about one-half to one milliampere. If it is one milliampere that is passing with of course as low a voltage as possible the needle should remain in position about ten seconds. At the end of five seconds decomposition of the tissues will occur, this may be seen by the accumulation of froth or foam around the needle. Gradually reduce the current to zero and withdraw the needle. With a pair of epilation forceps take hold of the hair, if it has been properly loosened it will come out of its follicle without the patient being aware of the traction made. Have a small paper card handy and touch the root of the hair to the card, it will adhere there. I usually fill four or five rows, ten hairs in each row. This not only keeps a record of the number of hairs removed at each sitting but it satisfies the patient that there are actually so many less each time.

The various punctures should be made as far apart as is possible, because the more healthy skin intervenes between the various punctures from time to time the better is the healing process, while if a number of these injured follicles are lying in close proximity to each other and should become infected an unsightly scar would be the result. The after treatment consists in removing the lampblack and proper cleansing of the parts. The patient should be instructed to frequently bathe the parts with hot water. About one week later a new lot may be so treated.

Each follicle after healing has taken place is filled with fibrous or scar tissue. About ten to fifteen per cent of the hairs so operated upon will return. With practice and care the percentage may be decreased to even five per cent. Should there be a heavy growth of hair this practice is altogether too tedious. The X-ray is perhaps the best and surest permanent depilatory we possess. Attach a Cornell tube to either a coil or static machine. If attached to a coil the interruptions must be as slow as the particular type of interrupter will permit, not more than twenty interruptions per second. A very handy little instrument known as the X-ray flasher may be attached to any make of coil; with this instrument in operation the interruptions may be made as low as ten per second. These slow interruptions have little or nothing to do with the therapeutic effect, but they prevent the tube from becoming hot, thereby not only maintaining a steady vacuum in the tube but preventing a heat burn to the patient. When the tube is properly attached bring the part to be treated in direct contact with the surface of the tube. Allow the tube to remain in one position from six to ten minutes, then

change to a new position until twenty to thirty minutes have been consumed. After six to twelve such exposures have been made upon any one area, a slight redness will be there when the patient enters the office. (A redness is always there when the patient leaves the office but passes away in one or two hours.) When this slight redness is present at the beginning of treatment about one quarter of the original time will now suffice to keep it there for about one week or ten days. If now the hairs are examined they will be found to be loose in their follicles and can easily be removed with the fingers. Treatments should now cease or instead of every other day, one treatment of short duration, about three minutes, will suffice in preventing a regrowth, which might otherwise happen if the X-ray treatment were discontinued too soon.

No after treatment of any kind is necessary if the technique has been correct. Should however the erythema in a very susceptible patient become alarming, cease all X-ray exposures and apply the small vacuum cup from a vacuum pump, causing suction for about thirty seconds then releasing and applying to new spot, continue this for about five to ten minutes three times per week and in ten days or two weeks all trace of the erythema will again be gone. If the technique has been perfect, there should be no return of the hairs, no pain during or after the treatment and absolutely no scarring. I know of no method of treatment that is as sure in its results as the X-ray in large areas of an overgrowth of hair.

There is of course no auxiliary treatment, unless any one of the many depilatories is applied and thereby the entire area cleaned off at once and kept so dur-

ing the X-ray course, which must be the same as though all the hairs were there.

PAPILLOMA—WARTS—VERRUCA.

Structurally all warts are practically the same, though they may differ in shape and location; they are essentially an affection of both sexes, rather more frequent during early youth or up to puberty and again in advanced age as after 60. When these warts appear during early youth they frequently disappear again without treatment, but if they remain or are a disfigurement, or when they make their appearance late in life as senile keratosis then they should be removed.

Treatment: The positive pole of a galvanic current is attached to a properly moistened pad and applied in the immediate neighborhood of the wart. The negative pole is attached to a terminal possessing several bifurcations, each of which is armed with a fine cambric needle. When everything is in readiness a piece of paper which has been perforated to just enclose the wart is placed over the growth in such a manner that the wart projects through the opening in the paper. One needle is then passed through the base of the wart transfixing it and resting upon the paper, then as many needles as the base of the growth will permit are now inserted all upon the same level and close down upon the paper. When a sufficient number—three to five—needles are in position, the current is gradually turned on up to the point of tolerance which will be about one and a half or two milliamperes. This strength should be maintained for about ten seconds, the current gradually reduced to zero, the needles can now be removed very readily on account of the negative electrolytic decomposition that has been going on.

The tops of the warts will dry up, form a scab and in the course of a week drop off, leaving a perfectly smooth surface with seldom a return of the original.

Accessory treatment: The high frequency current, the D'Arsonval or the Oudin type may be successfully used for the destruction of warts, naevi and other superficial growths.

An instrument devised by the author known as the Geyser Fulgeration electrode consists of a thin copper wire about 5 inches long concealed with a glass tube, ending on one end with a glass ring through which the index of the right hand is passed. The thumb and middle finger of the same hand holding a glass tube through which the first tube containing the wire is passed. This apparatus acts on the principle of a piston and cylinder and so arranged that when the outer cylinder is placed over a wart or similar growth, the inner piston carrying the wire is plunged up and down as required by a movement of the index finger through the ring of the piston. To one pole of the D'Arsonval current the wire of the instrument is attached. The outer shell or cylinder is now placed over the area to be treated, the inner piston is raised so that no sparking occurs. The spark gap on the coil should be not more than $\frac{1}{4}$ of an inch apart. Gradually allow the wire to approach the skin so that a few fine sparks fall now and then upon the area. In the course of half a minute the part will be almost anesthetic when the wire may be lowered down to its full length. This is so arranged that a collar on the cylinder allows the piston to descend to within 1-16 of an inch upon the skin surface. Through this 1-16 of an inch a very hot spark passes which at once

destroys the tissues beneath it and strange as it may seem with very little pain to the patient. A successive number of such contacts should be made, each contact lasting not more than $\frac{1}{4}$ to $\frac{1}{2}$ seconds each. The wart or growth will at once become blanched, form a blister, which when that heals leaves a smooth scar. With larger or deeper growths this fulgeration may have to be repeated at weekly intervals. Freezing with CO₂ or carbon dioxide is less painful and when convenient may be substituted. A solid stick of CO₂ is made about the size in diameter of a twenty-five cent piece and three or four inches long. The end is then shaped to the size of the lesion to be treated and moderate pressure is made for about 30 to 60 seconds. Upon removal of the contact the parts beneath will be frozen hard, in a few minutes, say 30, a blister will form with much the same subsequent results as the high frequency current application. In certain superficial lesions, among them lupus erythematosus, the results from the CO₂ contact are very encouraging, and not quite as painful as the fulgeration methods. The application of caustics or strong acids should only be mentioned to be condemned.

SYCOSIS.

A chronic, easily recurring infection of the hair follicles of the adult beard, may of course occur on any other hairy part of the body. The infection is caused by the presence of staphylococcus pyogenes albus and aureus. The most common cause is an abrasion of the skin during the act of shaving, later the infection.

Treatment: Apply the Cornell X-ray tube into close contact with the diseased area moving the tube about gently for a period depending upon the size of the area involved, ten to twenty minutes twice weekly. After the fourth to sixth treatment the hairs will fall

out, a reaction, slightly inflammatory will manifest itself with the result that healing takes place promptly with only slight scarring.

Auxiliary Treatment: Apply cloths wrung out in pure distilled water, keeping them as moist as possible with comfort for three or four days. By a process of osmosis the tissues will take up the water, thinning the pus which then exudes more readily. Epilate all the hairs, then apply a mild ointment of lanoline, or the yellow oxide of mercury.

TREATMENT.

The Treatment of Herpes.¹—Herpes is an eruption constituted by miliary vesicles of the size of a pin's head, transparent and grouped, in general, on a zone of erythema. Its appearance is preceded by a sensation of itching and burning, but, once formed, the vesicles lose quickly their transparency, dry, and give place to a small crust, which finally falls off without leaving a cicatrix. The duration of the affection does not exceed two weeks.

Besides the acute form, there exists a remittent form characterised by the fact that the eruption returns at more or less irregular intervals, always in the same region and sometimes always at the same point.

Three varieties are known: catamenial herpes, genital herpes (man), remittent buccal herpes. A fourth variety, not well known, and called by Brocq essential remittent herpes of the skin, is found habitually in the lumbar region, on one or other buttock, and the cheek. The former is sometimes preceded by neuralgic pains, sciatica, etc. It commences by a red spot about the size of a shilling, rapidly covered with miliary vesicles, and runs its course in one or two weeks, to return in two or three months, and so on for years.

Intermittent herpes of the face is generally observed in children or young people. The seat is the centre of the cheek, and more frequently the left than the right.

¹Med. Press and Circular, July 6, 1910.

Without any premonitory symptoms, the eruption takes place during the night, and in the morning a red patch is seen, which is soon covered with vesicles, and finally disappears in four or five days.

Although but slight in importance, this little affection, by reason of its recurrent tenacity, may cause no little annoyance to young girls.

The treatment is not very satisfactory, says Dr. Poutier. In any case, nothing heroic should be tried, as the affection gets well spontaneously in most cases. However, it may be well to prevent the infection in order to avoid a possible cicatrix. A warm lotion of camomile flowers might be applied twice or three times a day, and at night a sedative ointment:—

Ichthyol, 15 gr.

Oxide of zinc, 1 dr.

Lanolin, 4 dr.

Vaselin, 4 dr.

In the intervals between the eruptions the place may be rubbed with camphorated spirit.

The general treatment consists chiefly in the *régime*, which should exclude all heating foods.

The Place of the Enema in the Treatment of Certain Intestinal Diseases¹—

In a very practical and interesting article Drueck gives the following directions for the use of the enema:

Cholera Infantum and Cholera Morbus.

—In the treatment of these diseases a hot enema (110° F.) may be given after each stool to remove the irritating and infectious material from the colon and reduce the frequency of the stools. To this may be added any necessary astringents, such as zinc sulphate, 1 to 3 grains to a 6-ounce enema, or an equal strength of silver nitrate or lead acetate, or 3 drams of bismuth subnitrate. Where there is a great deal of griping pain 2 to 4 drops of laudanum may be given in 2 drams of starch water. To reduce the fever a cold enema may be given as outlined above. For collapse a large warm colocolyster at 100° F. should be administered and retained.

Colic.—When the pain in the bowels is not due to inflammation but rather to pent-up intestinal gases or to enteralgia, the hot rectal irrigation gives good results. Also in ovaritis and salpingitis. If, however, the rectal irrigation is not convenient, the nurse can give the hot enema. One or two pints of hot water is injected into the sigmoid and colon and retained for five minutes. It is then expelled and more injected. This is repeated 3 to 6 times. The whole treatment may be repeated 2 or 3 times each day. The rectal tip of the syringe will suffice and the rectal tube is not necessary. The patient rests on her back to prevent the water passing high up in the bowel. With the rectal irrigator the hot solution flows out continuously as it enters. It does not distend the tissues but bathes all of the parts with the same temperature during the whole treatment. It is, of course, much more convenient for the patient and physician.

Colitis.—To cleanse the bowel we use a quart of water at 110° F. containing one-half dram of sodium bicarbonate and sodium chloride and flush out the colon twice daily. After each bowel movement we give a simple enema at 98° F. To relieve the pain and inflammation we give a cold enema at 60° F. to be retained 5 or 10 minutes or, a cold rectal irrigation. This procedure may be repeated hourly, if needed. The cold enema or rectal irrigation, or even the cold anal douche, acts very nicely in treating prolapsed and irreducible hemorrhoids.

Chronic Diarrhea.—To lessen the congestion and stop the mucous stools we give an enema at 98° F., and follow it with a tonic enema of one-half pint of cold water, to be retained. To reduce the bacterial growth one or two large hot colocolysters should be given each day and followed with a small colocolyster of one pint containing gallic, or tannic, acid 1 dram. For the pain in the abdomen a hot enema at 110° F. after each stool is useful. For the alternate constipation and diarrhea a large, warm, simple, or soap colocolyster at 98° F. twice a week, followed by one pint of cold enema is advised. The general treatment consists in toning up the general digestion by regulating the diet and by means of the enema removing the masses

¹C. J. Drueck, M. D., Chicago, *Med. Record*, July 9, 1910.

of feces and mucus, and hordes of bacteria, and with the small enemas containing gallic or tannic acid destroying the retained germs.

Peritonitis.—In the treatment of peritonitis the large coloclusters at 75° F., given three times daily assists very much in preventing obstruction, and if there is added one dram of turpentine it helps to evacuate the gas and relieve the tympanitis.

Constipation.—In the treatment of constipation the enema serves a great many different purposes, but it must be judiciously employed or it may cause more damage than good. Where the constipation is due to atony of the bowel, due to loss of nerve sensibility, the hot enema at 110° for 15 seconds followed by the cold enema at 60° F. for 15 seconds twice a day after breakfast, and at night, accomplishes a great deal. Or we may use the rectal irrigation. To increase the peristalsis the cold enema and the graduated enema by which the bowel is stimulated, or a gradually lessening enema is of much use. We should always avoid completely emptying the colon and also use a small cold enema instead of a large quantity of warm water, except when needed to relieve autointoxication, or to remove hardened or impacted feces. To remove fecal masses the hot colocluster or enema of soap, oil or glycerin (glycerin 1 to water 4 ounces) should be used.

Heart Disease and Pregnancy.¹—The management of the cardiopath, says Moran, will depend upon the degree of compensation, character and extent of the lesion, and general condition of the patient. No matter how well balanced the heart lesion may be the case should be carefully watched throughout the pregnancy, labor, and the puerperium. If compensation is completely established, our efforts should be directed toward maintaining it by safeguarding the patient against excitement, overexertion, excessive eating and exposure to cold. The skin should be kept active by a daily tepid bath. Hot baths should be interdicted for fear of producing syncope. The bowels and kidneys should be carefully regulated to relieve the cir-

culatory system and to avert a possible toxemia. Pulmonary and renal congestion are among the most dangerous complications of heart disease, and should be guarded against by avoiding sudden chilling of the body and by the wearing of proper clothing. Moderate exercise in the open air is helpful, and the patient should rest in the recumbent posture at frequent intervals during the day. Should compensation be disturbed, as evidenced by dyspnea, cyanosis, edema of the lungs and extremities, absolute rest in bed should be enjoined, the diet restricted and heart stimulants given to meet the exigencies of the case. The judicious use of digitalis, strophanthus, nitroglycerin, nitrite of amyl, strychnia and morphia together with rest; will often restore the compensation, overcome the menacing symptoms and permit the patient to be carried safely to term or at least to the period of viability. If, in spite of these measures, the threatening signs persist, the pregnancy should be terminated. While premature delivery affords the advantage of a small child, it must not be forgotten that it is often fraught with great danger.

Comparatively few patients succumb during pregnancy, the majority die during or after confinement. It is important then that the character of the lesion and the amount of compensation be recognized, so as to be prepared to meet the emergencies as they arise. If the compensation is adequate the conduct of the labor should be the same as in normal cases, except that it might be advisable to give a hypodermic of morphia during the expulsive stage for its quieting effect. When the circulatory equilibrium is disturbed, digitalis should be given hypodermically and its effect sustained by the administration of strychnia in the same manner. If the blood pressure is high nitroglycerin will be indicated and if this measure does not relieve the cardiac embarrassment and heart failure threatens, venesection should be performed. The abstraction of 500 to 1,000 c.c. of blood together with the careful use of digitalis and strychnia will relieve the engorged lung and overburdened heart. Venesection is particularly indicated in mitral stenosis with ruptured compensation but is serviceable in all valvular lesions under like difficulty. It may become

¹J. F. Moran, M. D., Washington, D. C., *Amer. Jour. of Obstet.*, July, 1910.

necessary to assist the delivery by dilation of the cervix, forceps, version or a cutting operation. Whichever mode of intervention is elected, it should be carefully executed to avoid shock and sudden lowering of the blood pressure. Immediately after the delivery the latter danger should be further guarded against by placing a bag of sand on the abdomen. The placenta should be allowed to be expelled spontaneously, and no friction or kneading of the uterus practised, but free bleeding favored to relieve the disturbed circulation. Ergot must not be given. Nursing the infant should be prohibited as the patients are usually anemic. Medical and hygienic measures must be employed during the puerperium.

Regarding the advisability of marriage by the cardiopath, the writer is firmly opposed to it, for no matter how well compensated the lesion may be, pregnancy always exerts a baneful influence, exposes the patient to the danger of toxemia and dystocia, while if she passes safely through childbirth she may be left with a crippled heart for the remainder of her life. The writer is, therefore, in thorough accord with the dictum of Peter, "no marriage for the unmarried, no pregnancy for the married, and no nursing for the confined."

GENERAL TOPICS.

Being Supplanted.¹ Life has tests of all kinds, and no one can tell in what way one may be tried out next. A physician often finds himself in a position demanding great skill and resourcefulness in professional ability; and again, in other circumstances, it is not his knowledge and skill but his character that is put to the test, as, for instance, when he is superseded by another physician. Perhaps he has made a most thorough examination of the patient and study of the history, has decided on a diagnosis and has instituted treatment which is just beginning to have its effect. The obscure ailment of long standing is about to yield to the skillful treatment, when the patient, grown weary of the

necessary delay, abandons his first attendant and consults another physician who thus happens to have the case in hand when the symptoms clear up, and the first physician receives no credit, but, on the contrary, blame.

In another case, perhaps, the disease is one which does not yield to treatment. The patient is not content to be told that palliation is the only hope, and the physician who has done his best, or even the best that science can do, is thrust aside for someone else. The implied disparagement may be the harder to endure because of the patient's turning to one of the quacks who fatten on incurables or to some "patent medicine" or to one of the sects of mind-healing. It is no light task for a physician to accept the matter in a cheerful frame of mind and to refrain from bitter words that he may afterward regret.

When Abraham Lincoln was named for the presidency he supplanted another statesman, who, by training and experience, was qualified for the position. Similarly, Garfield entered the presidential ranks as a dark horse, stepping ahead of Sherman, whose attainments and valuable services seemed to point him out for the nomination.

It is worth while to compare the different attitudes assumed by these two men. Sherman became a disappointed man who seemed unable to forget having been pushed aside, while William H. Seward cheerfully entered the service of the great Lincoln who had supplanted him, and by faithful service as secretary of state made for himself a name honored by his nation and untarnished by any personal grudge.

The physician who can accept an undeserved slight without angry words and without hasty slurs on a brother physician has in him the spirit which will win the love of a community, and which will reward him in the long run. Not only this, but he has discarded unprofitable and bitter brooding over trouble that cannot be prevented, and has left his mind free for the joys of life and the pursuit of his profession with cheerfulness and satisfaction. As has been well said, we cannot prevent the evil birds of discontent and resentment from flying past our doors, but we can prevent them from building their nests in our homes.

¹Editorial *Jour. A. M. A.*, May 14, 1910.

American Medicine

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An assassin's cowardly blow has once again struck close home to the American people, and this time the Mayor of New York City is the victim. The fact that the attack bids fair to turn out more happily than the culprit making it intended, does not mitigate his offense in the slightest, or lessen in any way the dastardly character of the crime. Fate seems to have intervened most miraculously, with the splendid result that a useful life is preserved to continue the work that already during the past few months has caused a civic awakening and promised a new era of municipal progress.

It is entirely in keeping with the unreasoning character of such crimes that the object of its attack should be the last person one would expect to arouse the homicidal impulse. If ever a man has stood as a true guardian of the interests of the poor and unfortunate, it is Mayor Gaynor. To strike down such a man was as insensate an act as could be imagined, for unquestionably he has been as close to being an ideal representative of the masses as any man ever elected to public office. One can hardly doubt, therefore, that the deed was simply the culmination of an insane idea which took its inception in a disordered mentality and developed, as usual, from the most commonplace events.

Several facts are emphasized by this fearful outrage on a man who has been serving

the people so faithfully and well. The first is that such an attack is much more than an offense against an individual. Had it proved successful, the whole American nation would have suffered, for the work that Mayor Gaynor is doing in demonstrating the importance of civic rectitude in the daily life of a people, is nation wide in its influence. No one who has observed the intelligence, judgment and liberality with which Mayor Gaynor has approached the problems of America's greatest city, can fail to anticipate the most gratifying results. Withal common sense, kindness and broad humanitarianism have been in constant evidence, so that the feeling has been general that the rights and interests of every one from the lowest to the highest were in safe, efficient hands. Can any one deny that such confidence stands for the success and progress of a community? And when the bullet of some worthless nondescript miscreant robs a people of the leader who has been responsible for so much of their happiness and well being, can one fail to feel that the injury is personal?

Another fact brought to the front by this unfortunate affair is that every official is in constant danger of assassination. Surely this is a terrible state of affairs and it is conceivable that sooner or later many a man who has a family dependent on him will turn his back on public service because of the grave risks of sudden death. Obvi-

ously, since this will deny to communities the services of many of their most efficient citizens, the handicap to progress is all too plain. What are we going to do about it? This is one of the great burning questions of the hour. It cannot be shirked or ignored. Society must take active steps to protect those of its members who are given the responsibilities of leadership, or we must revert to more primitive methods of government. The question concerns every one who is interested in good government and it deserves the best thought of every law abiding, law respecting citizen.

In the meantime every one joins in the general rejoicing at Mayor Gaynor's lucky escape. It would seem indeed that good Fortune has smiled again on little old New York.

The degrading abuse of scholarships is the blackest spot on our educational record. They were originated for the sole purpose of training men who had shown exceptional ability, whether they were poor or not. The money was really a salary or retainer fee to assure the state or society or the university, the services of properly trained men who would otherwise wander off into other employments. Experience abroad showed that no other system would suffice and we in America have adopted it in the training of military public servants, for our cadetships are really scholarships to men who have proved their ability to take the special training. These positions are so honorable that they are highly prized and sought after by a host of candidates. The successful competitors are proud of the positions, while the holder of a scholarship in a college too often hides the fact in shame whereas he

should be prouder of it than a West Pointer. This deplorable difference is solely due to the fact that trustees and faculties impose only one basic qualification for awarding scholarships—poverty. The holders will do absolutely nothing in return for the funds which thus become pure alms. No wonder the student hides the badge of pauperism while the cadet shows his certificate of ability. Many a man refuses a college education because he will not acknowledge poverty, or accept obligations he cannot return.

Scholarships must be awarded for ability whether the man is rich or poor.

There is nothing degrading about poverty of itself, indeed it is a distinct advantage to an ambitious young man. Nevertheless in our curious civilization which has created money worship, a false position is forced upon those high minded men who deliberately choose a life work in which money making is impossible. Those who do nothing for the public welfare and devote themselves to the selfish end of money getting are held up as the greatest, while the poor man is assumed to be a failure in the struggle for existence. Naturally every one desires to keep up the appearances of success and thus poverty is hidden as a skeleton in the closet. Many of the upholders of civilization and its advancers are poor men, so that to some extent poverty may be a badge of our best citizenship and wealth an evidence of selfish exploitation of the public. Yet there is another side to this question. As we go down the scale of intelligence we do find as a matter of fact that poverty increases. . Omitting the few exceptional men and those who have been thrust into early want by the premature death of

parents, the poor as a class are the least able to profit by higher education. There is a lot of truth in heredity after all is said of environment, for no one ever saw a cow give birth to monkeys. "Like father, like son," will always be true in spite of the tiny percentage of apparent exceptions so widely published as evidence that children do not resemble parents. If we persist in devoting scholarships solely to the poor we are deliberately educating the least fit, and raising up a class of low grade professional men who are bound to be failures because they were not born with sufficient brains.

Scholarships should also be honors.

Competitive examinations are the only means of selection—imperfect no doubt but the best we have so far devised. The winners are merely certified as the best learners and they may not develop into creators—indeed the chances are they will not, because the successful men of the world are often if not generally those unable to study past achievements of others and who cut out new trails of their own. Consequently colleges have no way of determining future greatness and their sphere is narrowed down to selecting men best able to learn. If emotional philanthropists wish to be public and not individual benefactors they should stipulate that the scholarships are to help the best whether rich or poor. If the poor boy is outstripped by the rich let him take what training he can get. At present he is given a preference to the public detriment, and many a bright poor boy who has subsequently attained distinction in spite of handicaps has been retarded because he was compelled to refuse a scholarship. The experience of Trinity

College, Dublin, shows that the majority of winners of fellowships and scholarships are athletes, but let us go a step further and forbid the honors unless the candidate is a "sport," making exceptions in the case of those manifestly unable to be athletes, for some of these men are the most valuable we have. And let the honor be irrevocable as long as the holder makes progress, and not as at present where few except "greasy grinds" can hold them—men so poorly endowed that tremendous unwholesome effort is necessary. Why not consider the money a loan to be paid back with interest within ten years? Love of *alma mater* is sufficient collateral security.

The recent outbreak of smallpox on our ships of war on the Pacific coast has an interest more than ordinary, not only for the sanitarian but also because such incidents in view of the well known care given to prevention are invariably used by anti-vaccinationists as evidence of the worthlessness of the operation. The only thing evident is the fact that the sailors were not protected and the public must be informed of the reason. If the lymph used was inert, that fact must be published and moreover the method of its preparation and preservation. If the operations were not aseptic and a severe pus infection occurred in place of vaccinia, it will be a lesson for those who are not scrupulously clean. We cannot believe that there are any vaccine farms which deliberately sell improper material for that would ruin their business, but it is well to bear it in mind, as there are men otherwise honest, who really believe it legitimate to cheat the government even if death results as in this case. Finally there are

some physicians who do not repeat the operation in case the first attempt is unsuccessful, and these sailors may not have had a successful vaccination in their lives. If they had, their cases are of greater interest than ever, as it is so extremely rare for the disease to be fatal so soon after a normal vaccination in childhood. If they had had two successes, one in childhood and the other on enlistment, the matter is still more mysterious for there do not seem to be many, if any, such cases on record. In every way, the incident is of such interest that it must be explained, so that a repetition can be prevented.

Eugenics has at last been placed upon a definite scientific basis, but unfortunately the ones who know the most about it—family physicians—have the least to say. An appeal is now being made for data upon which safe generalizations can be made in the direction of preventing the production of defectives. There has been a lot of nonsense published to the effect that the purpose of Eugenics was the selection of proper life partners or even trial marriages. Such ideas still persist in spite of frequent denials. Boys and girls will continue to select their own partners as they have done from the beginning. Eugenics can not upset nature but is merely studying what nature does. Indeed it is ridiculous to assume that we know what types will be the best in the future of a rapidly changing civilization. The sole purpose of Eugenics at present is the prevention of degeneration, for even if it were possible to regulate breeding to change the type, the new forms might promptly die off in an environment unsuited to them.

Heredity in man was the subject of the Harvey lecture delivered March 6, 1909, by Dr. C. B. Davenport, Director of the Station for Experimental Evolution at Cold Spring Harbor, N. Y., and naturally Eugenics was touched upon, as far as the prevention of degenerate defects. Professor Davenport has achieved notable results in studies of the transmission of characters in the lower animals, and has taken up the investigation of the heredity of certain human characters, such as eye color, curliness of hair, syndactylism, polydactylism, deafness and blindness. The most interesting result is the discovery that many if not all our characters are transmitted by Mendelian laws. Consequently if both parents are congenitally deaf and blood relatives, the cause is probably the same in each and their children are generally deaf, but if there is no relation between the parents their deafness may be due to different causes or defects and one parent may supply what is defective in the other, and their offspring may be normal.

Consanguineous marriages are not harmful of themselves if the parents have no deficiencies, but as such perfect specimens do not exist, the chances are exceedingly large that related couples are similarly defective and are doomed to witness much unhappiness in their defective children. Deafness for instance is many times more frequent in the children of related deaf parents than in the unrelated as shown long ago by Bell. We are therefore now reducing to an exact science, the facts known in a general way, ever since man has been forbidding certain marriages. The new knowledge justifies us in widening the limits of consanguinity. There is a hope that we are already able to prevent considerable degeneration by legal restric-

tions, but in the long time it will require to convince legislators that such laws are needed, the family physician may do a world of good by advising against all consanguineous unions as close as second cousins—i. e. descendants of the same great grandparent.

New marriage laws are being formulated in many states but they are mostly designed to prevent the marriage of the diseased. The attempt to exclude the defective has always failed and rightly so, for Davenport shows that a defect is not necessarily transmitted at all, and every one is more or less defective. The prevention of criminality is really a part of Eugenics and will be practical as soon as we learn what has driven the unfortunates into parasitism. Davenport makes a plea to the medical profession for the data they daily observe and we earnestly bespeak for an enthusiastic compliance with his request. Blank forms will be supplied for family records as to certain traits but the greater question of the Mendelian transmission of disease also needs extensive study. The new knowledge is bound to be of extreme value in diagnosis and other practical advantages are sure to be found in time. Punnett (*Proceedings Epidemiological Section of the Royal Soc. of Med.*, March, 1906) has already made suggestions as to the possibility of new classifications according to transmissibility on Mendelian lines. It is high time this great neglected field be cultivated for rich harvests are certain, but the question of marriage of the unfit is uppermost. The medical profession must supply the data.

Abuse of clinical and dispensary treatment by other than the indigent class of

people, for whom the work was originally undertaken, is an old story. Yet such abuse continues.

Usually, upon the card of admission or ticket of identification handed each applicant at the entrance desk, is a printed extract from the by-laws of the institution, distinctly stating the misdemeanor, with its attendant penalty, committed by any person obtaining treatment who is able to pay for such services. Yet if an estimate were made of the really non-eligible persons who line the benches of these places, waiting for free advice, the figures would be startling.

Drop into one of these dispensaries and note the dress of some of the women patients. Latest cut in gowns; advance styles in headgear; up-to-date modes of hair-dressing, etc., etc. Surely they would be highly insulted at being classed as the "needy poor." They will throw up both hands in mighty horror of paying a physician an office fee, no matter how small, for necessary treatment, but they will dispose of almost any sum to a "beauty doctor" or pay fabulously for the removal of superfluous hair.

Question them, and you will find that they are not so thoroughly poor but that they are being treated by the family physician and simply come to the clinic of their own accord, to see if their "private doctor" was right in what he told them. Often and again they demand special and quick fulfillment of the necessary treatment as they are about to leave for the mountains or seashore for the summer—and yet so poor that they must have free treatment.

The admittance to free treatment of such people is regrettable. It is a direct offense against the really deserving for whom these institutions were created. It

takes time and attention from the poor who are the ones entitled to the services of the physician who graciously gives his time and knowledge to the work. He must needs treat many more than necessary thus not being able to give as much time to the individual case.

This class of intruders will invariably assert themselves in many ways. Feeling that they are not absolutely forced to be in the dispensary, but come from choice and because it costs nothing, they push ahead of their turn, "walk right in and sit down" and maintain a patronizing air toward the poorly dressed patient waiting beside them. They demand special attention, and try to monopolize the doctor's time with endless questions; then, at the end of the consultation, sally forth in a haughty and impressive manner. In the meanwhile, the "ordinary patient" or the *real* applicant for *real* and necessary attention, waits and is usually thankful for even the now shortened consultation. Not that the physician discriminates, but he works in limited time.

This state of affairs is brought about in part by the dispensary itself which aims to present a larger, and better appearing annual report of cases treated, than its contemporary. Also, to the fact that these people realize they can obtain the services of some of the best men in the profession free of charge; and finally, to the inborn desire of certain patients to get something for nothing, and plenty of it.

The results of the abuse fall upon the really poor whose rightful privileges are curtailed—to say nothing of the physician who is imposed upon.

Dispensaries and clinics as originally intended, for the treatment and relief of the

poor, are great and most commendable institutions. The work should be extended at every possible point. A physician is only too glad to do his share and usually does it in a most admirable spirit. It is a pleasure to render what little we have to those *who really need and deserve* it—but is it just to the real patient, that his privileges should be curtailed and limited by a class of people which does not belong here and which is not entitled to these privileges; that make a practice of obtaining these free services when not really forced to do so?

Of course an effort is made to exclude persons not entitled to the card of admission, but is such effort effective? Can it be effective? So long as the intruder realizes the the system is "easy," the poor and eligible persons will suffer.

The establishment of milk laboratories in the smaller cities is the next step in saving the infants. It is a waste of time to discuss the necessity for accurate modification of milk, but what seems unaccountable is the fact that the necessity is not more generally known outside of the larger cities. The old hit or miss rules of thumb are still practiced and even when accuracy is prescribed, it is often found that the ordinary household cannot carry out the directions. There is justification for the belief that the large infant mortality is partly due to the failure of the profession to insist upon the most minute accuracy. Indeed laymen themselves are sometimes inclined to criticize us for not knowing more about infant feeding. It is a modern necessity which some of us have not appreciated. There was a time when nearly all infants were breast fed and bottle feed-

ing was almost a sentence of death, but nowadays when so many women cannot make milk, many a family name would disappear were it not possible to so modify cow's milk that every case can be properly fed, perhaps better than by a wet nurse. The science is so thoroughly worked out in details undreamed of ten years ago, that there is no excuse for the ignorance so frequently commented upon. This seems like scolding but it is merely calling attention to the extreme slowness with which changes in practice become universal. We therefore bespeak further study by general practitioners to the end that a great demand for accurate modification will cause the establishment of laboratories in places where they would now be unprofitable from lack of patronage. The more numerous they are, the sooner will the practical and theoretical specialists clear up disputed points and devise new methods so that every infant, even in remote rural districts, can obtain food perfectly suited to its age and condition.

The elimination of nursing women seems to be the inevitable end to which science is tending. Lack of mother's milk is even now no bar to the raising of a large healthy vigorous family—royal babies have been reared by wet nurses for many centuries but common folks are becoming absolutely dependent upon the cow for existence. It is one more instance in which intelligence causes the survival of weak types formerly eliminated by adversity. Of course, it is a process of centuries though it has progressed so far already that few women of the cultured classes can nurse their babies more than a few months or few weeks—some not at all. The practical lesson to be derived at present is the necessity for placing the milk industry on a basis

of perfect efficiency. Unless this is done, the part of the human race now becoming dependent on the cow will be injured, and if the milk industry is wrecked, they will disappear. As they are more intelligent than the stupid mother who is a good milk-er and raises many healthy stupid children without cow's milk, it is quite evident that the advance of civilization demands the preservation of the non-nursing families. It is, of course, absurd to talk of the complete disappearance of the mammary glands, for that would require some thousands of years, but the process has gone so far that our civilization is absolutely dependent upon the cow. The crusade for dairy perfection is therefore far more than an effort to eliminate disease—it is a necessity if we are to survive as a race of intelligent beings. It is quite evident then, that the sanitarians having the movement in charge, must be supported by larger appropriations to the end that their efficiency be enhanced to the point of perfection. Pure clean milk must be supplied eventually, and the sooner the better. Moreover the proper kinds of milk must be found and produced, for different breeds of cows differ enormously and the milk of some, though useful for cheese making, and of others, for butter making, may be unfit for the use of babies.

Low sugar diet for infants is the latest suggestion of pediatricists and one more of those remarkable reversals of dietetic opinion to which attention is being constantly directed in lay journals as well as professional. The plan of adding to diluted milk lactose in sufficient amount to furnish 80 to 120 calories total food value per kilogram of body weight, is so new that it has not been taken up extensively in America, though it has been widely adopted in Ger-

many. Scarcely do we learn of it, before new investigations are published showing that the infants thrived better on scarcely any milk sugar, far less indeed than the average breast milk. Moreover there was normal growth and increase of weight on an extremely low diet of milk so dilute as to upset many of our fixed theories. It raises the suspicion that the normal human milk is really far weaker than we have believed. It has long been known that the old trouble with artificial feeding was the high percentage of proteids, and instead of diluting to a point where the infant could digest them, we first resorted to all sorts of devices to make them digestible, in spite of the fact that we often found children thriving on mixtures so weak as to amaze us. It now appears that the more modern plan of diluting top milk is not carried far enough and is often spoiled by the addition of too much lactose. In spite of the enormous amount of accurate work in the dietetics of infancy, it is quite evident that we are far from perfection. The need of modern milk laboratories is more urgent than ever, but their results must be checked up by more accurate observation.

Hereditary hypoplasia was the subject of an interesting and valuable paper read by Dr. Chas. P. Noble of Philadelphia before the Southern Surgical and Gynecological Society (*J. A. M. A.*, Feb. 13, 1910) in which attention is directed to the fact that defective development affects the whole body and every tissue and organ, and that undue attention is often given to one set of abnormalities in the hope of an impossible cure of all the others. The ovum itself is defective and cannot possibly develop into a normal being, and though

Noble is inclined to place the causes prior to conception in the parents or grand parents, there is ground for the belief that there are also other causes such as intra-uterine toxæmias or defective nutrition. Be the causes what they may, the results are deplorable. The gynecologists may have their minds centered on the delayed or defective puberty—almost a neuter condition in adult life—but it is found that this is merely one of innumerable defects, such as visceral ptoses due to deficient supports, lowered resistance to the infections, particularly puerperal sepsis and tuberculosis, peculiar forms of appendicitis, neurasthenia or any one of the myriad neuroses and psychoses, chlorosis and defective development of heart muscles and bones. The ophthalmologists see the deplorable reflex results of tiny ocular defects which normal people ignore, and the dermatologists, the skin neuroses they have such trouble in curing. Indeed the patients, if possessed of funds, pass their time in a weary round of specialists and not infrequently the essential developmental defect is never recognized. It is high time that there be a resurrection of the discussions of degeneracy—a word so frightfully misused a decade or two ago, when it was the fashion to class as stigmata the defects found in every human being in some degree. Perhaps a new word may be needed—not hypoplasia, for frequently there is hyperplasia in parts. Abnormal development should always be kept in mind for it may give the practitioner the reason why he cannot expect to cure and must devote himself to relieving symptoms to make life more tolerable to poor unfortunates who in a more primitive civilization, died in infancy.

To reform expert testimony, so that it will be real evidence of value to courts, now seems to be assured in at least twenty states, if we are to believe the press dispatches. The old disgraceful conditions are doomed because it has been finally realized that they are standing in the way of justice. The bills being prepared for legislative action all seem to be on the one plan of getting such testimony from a witness called by the court, paid by the state or county and absolutely independent of prosecution or defense—as nearly impartial as human plans can make it in our present state of imperfection and fallibility. There may be defects in the bills, no doubt there are, for no human action is perfect; but it must be confessed that no better plans have been suggested so far and that some of the ablest physicians and lawyers have given the subject very serious consideration. The accused and prosecutor can employ all the experts they desire to help in the conduct of the case, but such men will now be openly acknowledged as hired partisans who cannot occupy the witness chair.

The proposed laws exclude the partisan expert and, as the court is not presumed to know who are competent, confine the choice to a list supplied by a reputable body, say a local medical society in the case of medical cases. An engineering or chemical society should similarly nominate experts for their particular lines. To eliminate the dangers of officialism and the exclusion of experts from abroad or of new men not yet recognized as expert, there should be provision for the court calling any man jointly requested by the defense and prosecution if it so desires. We presume this will come in time—if not already provided for in the twenty states now studying the

matter; but even if there is no such provision, it is no ground for opposition, as the measures are so infinitely superior to the present horrors that everyone should demand the early enactment of the bills. Their passage will prevent the miscarriages of justice which have so displaced American jurisprudence.

Ehrlich's therapeutic researches have apparently given to the scientific world one of the most notable discoveries of recent times. The extensive reports of the results he and his collaborators have been obtaining in the treatment of syphilitic lesions with dioxydiamido-arseno-benzol or "606," as it is arbitrarily designated, are most surprising, and coming from a less reliable source would be received with more than a little doubt. The work of Ehrlich and his assistants has been so painstaking and consistent, however, that any announcement which they make based thereon, deserves the most thoughtful consideration. It must be admitted that the two thousand and more cases from which they draw their deductions, are certainly enough to warrant fairly positive conclusions. Few investigators can point to more extensive or definite evidence in submitting an important discovery to the world, and only commendation can be expressed at the conservative and dignified manner which Ehrlich has pursued. His discovery is assuredly startling and revolutionary, but it has been so free from sensationalism that it deserves to stand as a model of scientific conservatism. No matter what the final verdict may be, and even though present expectations are not fulfilled, it has been conclusively demonstrated that a very substantial advance has been made in the treatment of syphilis and its complications.

In connection with the whole affair, it is particularly interesting that the discovery should relate to syphilis. Of all diseases this has been considered one of the few positively curable. Its treatment with mercury afforded one of the few definite illustrations of established drug specificity. Consequently, syphilis is one of the last diseases that one would consider attractive to the therapeutic investigator. That it has been possible to improve so remarkably the treatment of a disease concerning which presumably the last word had been said, shows once again that there are no closed chapters in medicine. In other words, there is no fact so well established and certain, that some later discovery or investigation may not change its relative proportion, or relegate it to oblivion.

In the interests of therapeutic progress it is earnestly to be hoped that "606"—in spite of its nondescript nomenclature—may substantiate all of its early promise. A conservative attitude is to be recommended in taking up its use, but not conservatism carried to the extent of warping one's powers of intelligent observation and deduction. Too often in the past real progress has been hampered by bigotry and narrowness falsely claiming to be conservatism.

The psychology of getting old has been discussed from many viewpoints, but there is one side which might receive a little more medical attention without overstepping the bounds of quackery. One of the greatest tragedies is a woman's first realization that youth has passed and like a drowning man she will snatch at any straw which will enable her to retain the attractions which have been life to her. For thousands of years she has secured her life partner by means of these attractions

and she knows the unhappy fact that a man's eye never grows old. The fading of her youth is like death of her real self and occasionally produces a mental condition which might well receive some professional care, for it is at this period that she becomes a victim of the beauty doctors whose name is legion, and who only too often do irremediable harm. The point to discuss is whether such matters as prolonging the appearances of youth are beneath the attention or dignity of the serious physician. The relief of the mental suffering of this age is as legitimate a subject for professional thought as the similar state of the menopause, for it is a real suffering which no man can fully realize. To treat it as a joke is about as cruel a form of brutality as could be devised. To minimize it in a pleasing way often makes all the difference in the world between great success as a diplomatic family physician and the utmost failure of a truthful brute. Success can be achieved without lying or flattery and it is therefore well for the young physician to know a great deal about the psychology of getting old.

Vacation time is at hand and it is quite evident that people are recognizing as never before the importance of a complete rest and change of scene for at least two weeks or a month during the heated season. The medical men of the country have been particularly delinquent in the matter of vacations, but fortunately every year sees many more physicians taking a needed rest. Such a course is based on good common sense, and invariably results in more benefit than is evident at the time of the vacation. Our earnest hope is that every physician may realize the value of an annual rest.

ORIGINAL ARTICLES.

A CASE OF GONORRHOEAL CONJUNCTIVITIS IN AN ADULT ABORTED BY TWO PER CENT NITRATE OF SILVER.¹

BY

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New York City.

At four o'clock p. m., on April 1st, a gentleman of forty-nine years of age presented himself at my office with his left eye in a condition of severe inflammation. There were three or four strings of yellowish pus in the lower cul de sac, and the inner canthus. The pus would form as the eye was looked at. There was little or no swelling of the upper or the lower lid, but the eyeball was fiery red. The patient stated that he had gone to bed the night before with his eye in a normal condition, and awoke in the morning with it slightly stuck together and inflamed. By noon, pus commenced to form, and it became slightly painful. On inquiry, the patient denied that he had gonorrhoea, and said he had had no sexual connection for one month. He had not come in contact with any suspicious person, and was totally at a loss to explain the situation.

I made a provisional diagnosis of gonorrhoeal conjunctivitis, and sent the patient to the Practitioners' Laboratory for verification of the diagnosis by the microscope. The patient left my office at once, and in three-quarters of an hour returned. In the meantime I was informed by 'phone that the diagnosis of gonorrhoea had been made by three separate observers. The

gonococcus was found in great abundance, and the diagnosis was established beyond peradventure.

I immediately informed the patient of the exceeding gravity of his case, and the necessity of long continued and persistent treatment day and night until the inflammation ceased. I sent him forthwith to a hospital, where a day and night nurse were put upon the case, and the treatment was under way by half past six.

I have always been taught by my masters, and I myself have always taught, that nitrate of silver should never be used in gonorrhoeal conjunctivitis of the adult except in the last stages, when the brawn and thickness of the lids has disappeared. I have always been taught, and I have always taught, that its use in any other stage was not only of no advantage, but was distinctly harmful; that it would produce a brawny condition of the lids, even if it was not already present. Nevertheless, it has been my opinion for a great many years that if a case of gonorrhoeal conjunctivitis of the adult could be seen at its incipency, or even before the lids had swelled to any considerable extent, when the infection was on the surface of the lids, and the microbes had not yet burrowed beneath the mucous membrane, the disease could be aborted when it had started, or could be prevented in case suspicious secretion had been known to enter the eye.

Those views were supported and confirmed by the remarkable results which had been obtained in the prevention of ophthalmia neonatorum by the Cr  d   method. As far back as 1885, when I saw my first case of gonorrhoeal conjunctivitis and promptly lost it, I made up my mind to attempt to abort any case of this disease which I might see, provided the inflammation had

¹Read before the Academy of Medicine (Section on Ophthalmology), April 18th, 1910.

not gone so far as to produce the condition known as brawn. Since that time, all the cases of gonorrhoeal conjunctivitis which I have seen have come under my observation after the above mentioned condition has been fully established, and though I have been strongly tempted, even under those circumstances to try nitrate of silver in my treatment, I have refrained from doing so by reason of my respect for my masters and other recognized authorities.

It is well known to us all that nitrate of silver, even in an exceedingly weak solution, is a most powerful germicide, and in a 2 per cent. solution is necessarily invariably fatal to microbe life. In the case which presented itself to me, I saw the opportunity for which I had been waiting for years, and I did not hesitate to put my idea into execution. I had no reason to suppose that I would do any harm, inasmuch as the stage of brawn had not occurred, and I felt absolutely certain that I would be able to destroy all the microbes present in case they still remained upon the superficies of the conjunctiva.

At six o'clock I saw the patient at the hospital, and under antiseptic precautions, placed a watchglass crystal over his sound right eye. Having assured myself that it was fast sealed, I turned the lid of the left eye, which by this time was running pus in considerable quantities, and having washed it off thoroughly with a stream of 1-3000 bichloride, I depressed the head of the patient to a horizontal position, and with the upper lid turned and the lower lid everted, I filled the entire conjunctival cul de sac with a two per cent. solution of nitrate of silver, allowing it to remain until the entire mucous membrane commenced to turn white—about fifteen seconds. It was then washed away with a normal salt so-

lution. Atropine was instilled into the eye, and routine ice applications were immediately established. The pads were changed about every three minutes and the nurse was directed to keep the lashes and corners of eye free from pus. Every two hours a 1-3,000 solution of bichloride of mercury was instilled into the lower cul de sac, but the nurse was instructed not to touch the upper lid except with sterilized wet cotton, and to pull down the lower lid with the ball of her forefinger, exercising care not to bruise the lid with the nail.

I saw the patient again at eleven o'clock. The upper lid had swollen a little, there was a slight bluish oedema at the inner corner of the upper lid, and while there was no chemosis, the eye was very red and the circumcorneal conjunctiva seemed to be thicker than at 6.30.

The secretion had already commenced to diminish, and appeared to be stringy and scant. The patient experienced some discomfort, as if there were sand in the eye, but suffered no pain. The right eye, while it appeared to be slightly weak, was apparently not infected, and was not molested. The patient was seen again next morning at nine o'clock, my instructions having been faithfully carried out during the night by the nurse. At that hour, the slight oedema of the upper lid had likewise disappeared, the secretion was less profuse than the night before and seemed sticky and viscid. The patient was comfortable. There was a small quantity of yellowish matter in the inner corner of the right eye, as seen through the crystal, and though the patient had no discomfort in that eye, he said it felt wet and moist, and impromptu me to apply the nitrate of silver to that one also. I refused for several reasons. First, I doubted if the right eye had

been infected, and thought that the condition might be due to the sweating caused by the glass; secondly, the fear that I might infect the eye myself by manipulation; third, I was employing an unusual method of treatment, which, if it failed in the end, would have been employed on two eyes instead of one; fourth; the reflection that in case of failure I would have the condemnation of my colleagues, if not of my own conscience. Fifth, I felt that I had the matter completely in hand, and I wished for the right eye to be profoundly infected before I attacked the disease, in order that I might establish my views on this subject firmly and unequivocally.

I saw the patient again at half past one on the same day. The left eye continued to improve, the secretion becoming scantier, only an occasional thread being found in the lower cul de sac, though the lashes were matted together from the former secretion; no chemosis, no swelling of the lid, no pain, except the natural discomfort of an acute conjunctivitis; no corneal complication. The right eye had in the inner corner a ball of moist yellow pus; the eyeball had commenced to be red; the patient complained of great discomfort on that side, was himself convinced that the right eye was infected, and importuned me again to apply the nitrate of silver to that eye. I refused, and determined to wait until six o'clock.

At six o'clock the right eye was running pus freely as the former had done; there was great discomfort, slight swelling of the lid and thickening, though no chemosis, of the bulbar conjunctiva. A stream of half dried pus had run from the inner corner down upon his cheek, and the eye was fairly in the grasp of the gonococcus. I removed the watch crystal, and performed

the same manoeuvre as with the first. The upper lid was turned and the eye was thoroughly cleaned of all pus by 1-3000 bichloride, and the same solution of nitrate of silver was applied in exactly the same manner, with the head in the same position as before and allowed to remain about fifteen seconds. It was then washed off with normal salt solution. Ice applications were ordered, together with the same instructions as had been given for the left eye. Two separate basins and blocks of ice, and two separate sets of pads, however, were used; one for the left and the other for the right side. The nurse was instructed to be careful not to transfer any infection from the right to the left eye.

The following morning at nine o'clock the upper lid of the right eye was slightly swollen, and the same bluish oedema appeared as had been seen in the left. The secretion had become less and the right eye was behaving in all respects exactly as the left had done, except it was running on a schedule twenty-four hours behind the other.

I now felt that I had the situation completely in hand, and had no fears whatever for the ultimate result. The left eye had by this time ceased to run pus, and from that time on until the case was dismissed there was no untoward symptom of any kind. The treatment was kept up persistently day and night, and the right eye continued twenty-four hours behind the left one in all respects.

To cut the matter short, the patient could have returned home on the fifth day with his eyes simply red. By that time the discharge had entirely ceased in both eyes. Ice applications were stopped on that date, the eyes were simply kept clean, and boracic acid solution was instilled into the lower cul de sac.

On the Friday which completed one week of treatment, the patient returned to his home with his eyes slightly red, but without any swelling of the lid, without any discomfort, and without their being stuck together in the morning, although no salve of any kind was used at night.

At this writing, ten days from the date of his infection, the eye is almost perfectly white, and the patient is thoroughly comfortable. This is the history of the case.

Gonorrhoeal conjunctivitis of the adult and the new born while they have the same etiology are two very different diseases from a clinical standpoint. The prognosis in the new born except in unusually severe cases that have progressed for a considerable time before being seen, is as a rule good, whereas the prognosis of gonorrhoeal conjunctivitis in the adult, is almost always bad and invariably grave.

I, for my part, approach the treatment of the disease in the adult with the profound conviction that the eye will either be entirely lost or irreparably damaged. Added to this is the necessity of continuing the treatment unceasingly day and night for weeks.

The majority of cases of gonorrhoeal conjunctivitis in the adult are seen when the process has gotten well under way when the pus is running in great abundance and when the upper lids have become intensely swollen and the brawny stage is present.

Nitrate of silver has always been my mainstay in the treatment of gonorrhoeal conjunctivitis of the new born at all stages except that in which brawn has appeared, but I have always avoided its use in the gonorrhoeal conjunctivitis of the adult except in the late stages

when the damage has been accomplished and the mucous membrane has again become soft. I have not had a case of this disease in the adult to treat since argyrol and protargol have been introduced to the profession. I have used them however in infected keratitis and conjunctival affections characterized by the presence of discharge and I have always obtained good results.

It is certain, however, that these two latter day agents are not comparable in germicidal qualities to nitrate of silver even in a weak solution. Moreover both argyrol and protargol are nasty and tenacious and it is not so easy to cleanse the eye when they are used as when nitrate of silver is. For these two reasons I do not employ it as often as I do nitrate of silver. On the other hand the latter is painful in strong solution and will leave a permanent stain on organic textures.

The main object, however, in the treatment of our cases should be to get the best result in the quickest way and I have always found that nitrate of silver has given me that result.

I purposely avoided using argyrol or protargol in order to forestall the statement that might be made by the advocates of these two agents that their use had been instrumental in the success obtained.

When I first saw this case, after diagnosis had been established by the microscope, I recognized a good opportunity to establish the period of incubation of gonorrhoeal conjunctivitis, but my hopes along this line were dashed to the ground by the statement of the patient that he had not only had no gonorrhoea himself but had had no sexual connection within a month, and had come in contact with no suspicious persons during that time. The infection

must have been accidental through the hands of some one whom he met.

So far as I am aware no one has absolutely established the period of incubation of gonorrhoeal conjunctivitis at least in the adult. We know that children are sometimes born with infected eyes, but that ordinarily they become inflamed from 24 to 52 hours after birth, so that the period of incubation of gonorrhoea in the newborn is probably from 24 hours to three days.

This gentleman first stated that he had gone to bed with his eyes completely well, and had risen in the morning with a small amount of pus in the left eye; but a later questioning revealed the fact that he had read in bed up to 3 o'clock, when his eyes felt uncomfortable. The following morning his left eye was affected as has been described. It is fairly safe to say, however, that when I saw the case for the first time, infection had been present anywhere between 12 to 24 hours. At the most, I believe, I saw the case 48 hours after its infection. This will serve, therefore, in a measure, as a rule by which we may apply nitrate of silver in infections of the adult.

It will be recalled that I saw him first at four o'clock and that treatment started at half past six. He noticed his first symptom on arising at 8 o'clock, so that my treatment started within 10 or 12 hours. It will also be remembered that I allowed at least 10 to 12 hours to elapse in the right eye after pus was noticed, before I commenced the treatment, in order that I might have definite data for future guidance.

When we consider the dramatic and fearful course which this disease is ac-

customed to pursue and reflect upon the rapid and successful cure which was made of it in this case, the result is gratifying and striking.

For my part, in the future, if I should have a case of gonorrhoeal conjunctivitis in which the lids were still more swollen, and in which chemosis even had already started, I would most certainly attempt to abort it by the same method. My own experience has taught me that nothing can be more fearful than this disease when allowed to run its natural course under palliative treatment, and any attempt to abort it even with severe measures cannot be fraught with much worse consequences than would naturally follow without them.

The result bears perhaps as much upon the prophylaxis in those who treat gonorrhoeal conjunctivitis as upon those who are afflicted with the disease. As soon as I realized that I had the disease well in my grasp my nervousness in regard to my own eyes and that of my nurses ceased entirely.

We cannot fail to recognize the value of the discovery of the gonococcus by Neisser, and the suggestion of Credé, by the combination of whose efforts this result has been made possible. As soon as pus of a suspicious nature is seen in the eye, bacteriological examination should be made, and if gonococci are present, this method of treatment should be at once employed in detail supplemented by the regulation treatment with which we are all familiar. In this way 8 to 10 hours may be gained upon the ravages of the microbe and success assured even more certainly than in the case described.

11 E. 48th St., N. Y.

THE SOCIAL AND CLINICAL ASPECTS OF TRACHOMA.

BY

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Clinically we may divide trachoma into four distinct stages, i. e., (a) the formative stage, (b) the acute inflammatory stage, (c) the stage of decline or cicatrization, and (d) the post-trachomatous stage. Every ophthalmologist who had the opportunity to observe a number of trachoma cases will recall the disease in one of these stages. There is no doubt an incubating period which clinically speaking however cannot be recognized, and consequently cannot be taken into consideration in a paper that treats on the subject purely from the clinical point of view. Trachoma in this country runs a milder course than it does in European countries where the disease is more prevalent. In fact a case of blindness as a result of trachoma in this country must be considered a rarity indeed, excepting among the Indians where the disease is much neglected. This must be explained on the rational ground that the general hygienic rules are more readily observed here. Our dwelling places are better, cleaner and more aerated. We give more attention to personal cleanliness; daily or semiweekly bathing is more practiced here than it is in the so-called trachoma districts of Europe and Africa; and above all the people of this country are better educated to the necessity of consulting a physician in minor ailments in the early stages of the disease. Even the newly arrived immigrant quickly adapts himself to our mode of living.

Trachoma is a contagious disease the infectious nature of which is caused by a micro-organism that has as yet not been isolated. In the formative stage of the disease there is no discharge from the conjunctiva and indeed the patient may not be aware of any existing abnormal condition in his eyes. The disease develops slowly and insidiously and advances to the formation of little granules without giving the slightest warning. Occasionally the patient may feel a sense of dryness or roughness on closing the lids. With the formation of little follicles or granules the patient often feels a sensation as if small particles of sand were in the eyes. On examination at this time by everting the upper lids we find that the tarsal conjunctiva is studded with small papillae which is the result of some proliferation of lymphoid tissue. The same is noticeable in the utrotarsal fold probably to a more marked degree. This formative and quiescent stage may last for a considerable length of time. Slight photophobia may also be present at this stage. During this stage the disease is not contagious, there being no discharge from the conjunctiva. Sooner or later however acute inflammatory symptoms set in and it is during this stage of acute inflammation that the disease is most contagious. In the formative stage the disease is absolutely curable and judicious treatment applied will cure the condition leaving no untoward sequelae behind. When however this stage is permitted to pass and the acute stage sets in the disease becomes more serious and less amenable to treatment. Acute trachoma, that is trachoma with a sudden onset without the formative stage, I believe is not seen in this country and I doubt that it exists in any other

country. We must not rely on the patients' statement that they did not have the disease prior to the onset of the acute inflammatory symptoms. Trachoma is essentially a chronic disease that has periodic acute exacerbations. These exacerbations may be the result of a superadded conjunctivitis non-trachomatous in origin. Even in cases of so-called acute trachoma where the patients claim that they always had good eyes a close examination will reveal the fact that for a considerable time prior to the onset of the acute inflammatory symptoms they felt some irritation, some sense of dust particles lodging in the conjunctiva to which they paid no attention. During the acute stage of the inflammation the patient suffers from marked photophobia so much so that the patient has difficulty to keep the eyes well opened. A mucous or mucopurulent discharge is present not only in the morning but may be constant. The conjunctiva is markedly thickened, the follicles and granules as the case may be are much enlarged and the lids as a result of this thickening may droop somewhat. This stage is the most infective stage and great care must be taken to avoid contact with the discharge. It is however well to recall the fact that in many families where one member is affected with this disease during the acute stage, and although no special care is enjoined still other members of the family are not necessarily affected. I have repeatedly found this to be true in the families that I have examined. This would tend to the belief that the infectious nature of this disease has been greatly overrated.

Treatment applied at this stage while effective will require a very long time to effect a cure. One to two years' treat-

ment under these circumstances will be necessary. Operative treatment however in suitable cases will shorten the course decidedly. From this stage the disease goes over into the third stage, that of cicatrization. The inflammatory symptoms gradually decline. The photophobia diminishes, the muco purulent discharge ceases, the pain stops, the conjunctiva becomes thinner, the follicles and granules slowly disappear. The conjunctiva is no longer rough but assumes a smooth character and the previous lymphoid cells are converted into fibroblasts, epithelial cells disappear and are replaced by smooth fibrous tissue of the nature of a cicatrix. In favorable cases the contour of the lid is preserved, the integrity and the function of the lid is maintained and the eyes retain an approximately normal appearance. In many cases however the disease passes into the fourth stage, the so-called para or post trachomatous stage. During the third stage of the disease the condition is less infectious; as a matter of fact the disease has run its course, only the consequent changes in the tissues resulting from the conjunctival inflammation can be observed. The fourth stage may be seen in a quiescent state as well as in an inflammatory state. This may also be observed in the third state. But this inflammation is not caused by the primary causal element of trachoma but is rather of a mechanical nature. Usually the cicatricial fibres in opening and closing the lids and in the movement of the ocular muscles cause traction upon the conjunctiva of the eyeball and thus mechanically causes quite often a recurrent inflammation with slight mucoid discharge which discharge however is no longer infectious. Recurrent ulcerations are very

often seen in these cases, they readily yield to treatment but frequently recur producing opacities of the cornea. Pannus is a frequent finding in this stage. Of course pannus may occur in the second or third stage but the well formed thick fibrous covering of the cornea that often reduces vision to a very considerable extent is usually seen in this stage. The formation of this fibrous covering of the cornea may be a part of the inflammatory process of the conjunctiva extending over the cornea or it may be the result of mechanical irritation from the heavy eyelid when it is found in the second or third stage. When however the second and the third stage of the disease have passed without giving rise to pannus formation its manifestation during the fourth stage of the disease can always be attributed to a faulty misplacement of some of the eye lashes that irritate the cornea. In this post trachomatous state we often find a distortion of the contour of the lids, the tarsal cartilages having been softened we not infrequently find the lids turning inward causing the cilia to constantly irritate the cornea. The constant irritation gives rise to repeated ulceration or the formation of a pannus. The pannus protects the cornea from the irritation but it greatly reduces vision. The reduction in vision is in direct proportion to the extent and the density of the new fibrous covering of the cornea. Ectropian and entropion are conditions of the lid that are seen in this state of the disease. Complete cure in these cases is of course out of question. This stage of the disease is however reached in cases that have been neglected for years without proper treatment. It is my experience that patients who submit themselves for treatment in the

first or second stages if they attend to their eyes religiously never reach this rather very troublesome stage. When we study trachoma we must not fail to appreciate the social aspect of this disease. Climatic conditions and social environments greatly influence the course of the disease. Trachoma is very prevalent in Egypt. In several of the government schools 90% of the children have been found to have trachoma. The disease there runs a more severe course and is mostly followed by entropion or trichiasis. In this country the disease is not so very common and runs a milder course. The rational explanation for this may be found in the difference of environments, social and hygienic influences which are far superior in our country. It should be remembered that other diseases of the eye also run a more severe course in Egypt. Poverty, overcrowding, uncleanness, indifference to personal hygiene, failure to consult a physician early in the disease is responsible for the causation as well as the bad termination of this disease. The disease in this country is endemic but is also imported from European countries by the stream of emigration. Our trachoma cases do not come from Egypt but rather from Russia, Italy, Armenia and Assyria, Greece, Roumania, Austria and Ireland. But even in these classes of patients the disease runs a milder course, which fact is attributable to a change in environment for these immigrants lead quite a different life after their arrival on this shore. Adapting as they do themselves to the new surroundings they acquire cleaner habits in the mode of living. It is to this simple fact that we must attribute a lesser degree of infectiousness to trachoma in this country. Trachoma is how-

ever found to a large extent among the native Indian tribes, and in Mexico where the disease runs a rather more severe course which we may attribute to a lack of hygienic life. Trachoma however is an infectious disease against which all measures of prophylaxis should duly be exercised. The government recognizing the infectious nature of this disease is jealously guarding the interest of this country by medical supervision of the immigrants. Immigrants that are found to have this disease are not permitted to land. The law on the subject is quite explicit. Trachoma is classified by the government among the dangerous contagious diseases and examiners are instructed to regard as trachoma any case wherein the conjunctiva presents firm well marked granulations, which do not have a tendency to disappear when the case is placed for a few days under hygienic surroundings or do not yield rapidly to ordinary treatment even though there be no evidence of active inflammation at the time of the examination nor appreciable discharge nor as yet signs of degeneration or destructive processes. There is something indefinite in this vague description of trachoma when we consider the fact that a government official is to pass on the disease who is instructed to follow out the letter of the law. Steerage passengers may have a few granules or follicles such as described in the law without there being any trachoma present. That some unfortunate immigrants are deported under the pretense of trachoma I am quite sure and I have some letters in my possession from men like Mandelstamm who have seen many cases that returned with follicular conjunctivitis where the medical inspector pronounced the case as trachoma. This country is of course not to be made

the dumping ground of trachoma but our overvigilance is not justified. Trachoma is on the decrease instead of on the increase. We need not fear a spread of this disease. Conditions here differ greatly from the condition in the trachomatous countries. We have a keener sense of prophylaxis and a higher appreciation of the value of medical science. Cases such as described in the official definition of trachoma by the government are not infectious and readily amenable to treatment and the cause of humanity would dictate some compassion upon the unfortunate traveller seeking a resting place on our shores. The arbitrary ruling of the government medical inspector is nothing short of despotism. There is a tendency in some circles to advocate municipal and state control of all cases of trachoma. It is pointed out how European countries have long ago taken steps for the eradication of the disease. This tendency while probably actuated by true patriotic motives is leaning to a direction altogether unwarranted and would only tend to burden the public and work undue hardship upon the unfortunate sufferer. A trachoma commission for the study of this disease is of course in accord with modern scientific principles. Anything further than this is neither necessary nor desirable. We stand in matters of personal hygiene much higher than Europe and our methods for the eradication of this disease must be of a more intelligent nature and built upon a humane basis. What we need here is a trachoma institute for the purpose of educating the public that the disease is infectious, that it can be prevented, that it is curable in the first stage, that early treatment is essential to bring about a permanent cure. This institute should also provide free treatment to those already

affected. Such an institute could easily determine the extent and wide spread of the disease. Its statistics would be of great value to guide us in our endeavor to eradicate this disease without persecuting the sufferer, without depriving him of his mode of livelihood while under treatment. A trachoma institute would also provide the facilities for the study of the disease. It must be admitted that whatever experimental work has been done in this disease was done by European physicians. A trachoma institute where experimental work could be intelligently executed is a consummation devoutly to be wished. As yet the etiologic factor has not been isolated. The Prowazek or Greef bodies can not be accepted as the real cause of the disease. The European and American ophthalmic clinicians are not ready to consider these trachoma bodies as the cause of the disease. Here is enough work for the diligent student in ophthalmology who is seeking an opportunity for such work.

917 Spruce St.

HYSTERICAL AMAUROSIS.

BY

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When one remembers that hysteria has a range of simulation of disease from excess emotion to phantom tumor he will not be surprised that it at times affects the visual apparatus.

The visual apparatus may be affected in a number of different ways, the principal ones of which are pseudo palsies and various degrees of impairment of vision up to complete blindness.

Knowing that the manifestations of hysteria are all of a nervous origin and that the eye is the most complex and of the highest type of development of any part in the body it is somewhat surprising that ocular manifestations are not more frequently met with in hysterical persons.

Hysteria may manifest itself in the ocular mechanism as a palsy, particularly of the levator muscle; as an asthenopia, amblyopia or an amaurosis. One or more of these conditions may be and frequently are combined.

There have been a number of cases of paralysis of the motor oculi reported. I do not know how many of these cases have been reported but the genuineness of these cases is doubted by some authors particularly Jelliffe¹ who says "Reported cases of Hysterical Motor Oculi and Abducens Paralysis are extremely doubtful and a differentiation between a paresis and a spasm is extremely difficult.

The muscular conditions do not interest us at this time so they will be disposed of without farther consideration.

Hysterical amblyopia is fairly frequent and may be monocular or binocular. This form of amblyopia is almost always associated with dyschromatopsia in the form of a concentrically contracted field for white and colors, also frequently a reversal of a portion of the color field particularly red and blue.

On the other hand Mitchell and de Schweinitz² report a case in which the field for white was normal with a great increase in the size of the color field, the red being almost as large and in one quadrant larger than the white field.

¹Osler's Modern Medicine. Vol 7.

²Posey and Spiller, p. 633.

It is a curious thing that some hysterical fields show a marked contraction for white and colors but the color order, which is the blue, yellow, red, green and violet is undisturbed while other fields equally contracted show the reversal of one or more colors; while a third variety as observed by J. K. Mitchell¹, and which is quite unusual, showed a normal field for white with color reversal; or with a marked increase in the size of the color field with or without color reversal. In Dr. S. Wier Mitchell's² case, there was a normal field for white, enlargement of the color field with reversal of the red and blue, the red in one quadrant being larger than the white.

Why is this?

There seems to be no constancy in these conditions—but then that is a characteristic of hysteria.

de Schweinitz³ states that in hysterical amblyopia the red field is affected last, the others being contracted and the red normal in size, this causing the reversal.

This seems very simple and accordingly we should in our early cases find color reversal. When are we to see the contracted field without color reversal and when with the color reversal?

The contracted fields without color reversal are most frequently seen, which tends to bear out de Schweinitz's statement. I have been unable to find any explanations for these variations. The statement of de Schweinitz may explain the "how" but not the "why" of the conditions.

Hysterical amaurosis or complete blindness is quite rare in literature. The blindness may be monocular or binocular. Ac-

cording to the literature the binocular form occurs with more frequency than the monocular form.

Kerneis, who is quoted by de Schweinitz, collected and analyzed the literature. He succeeded in gathering 34 cases of binocular hysterical blindness. To this number de Schweinitz has added six and Diller⁴ four, making now a total of 44 cases.

Jelliffe⁵ says "double sided hysterical blindness is rare and few cases are free from skepticism. Unilateral blindness is frequent."

Monocular hysterical amaurosis according to the literature is more rare than the binocular form. Kron collected the recorded cases up to 1902 and found 26 cases of binocular and 23 of the monocular form.

de Schweinitz states that the monocular form is the more commonly observed phenomena and then explains the discrepancy of his statement and the figures with the suggestion that all or nearly all of the cases of the double amaurosis have been reported while only a comparatively few of the unilateral cases have been reported.

The onset may be gradual or sudden although in all the recorded cases I could find in the literature, the onset was sudden and usually associated with some nervous shock or excitement in some form.

This condition is usually associated with some other nervous manifestations but this is not always the case. The ocular condition may be the only trouble.

The blindness may last from a few days to as many years, vision usually being regained suddenly.

¹Posey and Spiller, p. 632.

²Posey and Spiller, p. 630.

³Posey and Spiller, p. 630.

⁴*Journal A. M. A.*, p. 1307, Vol. 52.

⁵Vol. 7, Osler's Modern Medicine.

The case that I wish to report this evening is one that occurred in Dr. Harry Friedenwald's private practice and is one of hysterical monocular blindness. The following is taken from Dr. Friedenwald's notes:

The patient, a young woman 21 years of age, came under observation Sept. 20, 1909, at 9 p. m. Saw the patient 2½-3 hours after the blindness came on. The attack occurred suddenly while eating supper. There was no definite history of any shock to cause the onset, but some family disturbance had occurred concerning which the patient was very reticent.

She is of good physical development and apparently not of a nervous type and at the first examination was wrought up and constantly on the verge of tears.

For the past 9 months has been under treatment for indigestion.

The examination showed that she was blind in the left eye, vision being reduced to seeing movements of the hand. Eyelids and conjunctiva red from crying. Pupils equal and of normal size and reacted readily to light. No ptosis or photophobia. Fundus normal, no odema or palor and no change in the vessels.

The suddenness of the onset and the almost complete loss of vision suggested the diagnosis of embolism of central artery of the retina. For this reason nitrite of amyl pearls were prescribed and massage of the eyeball ordered.

A second fundus examination was made about a half hour later, the patient having in the meantime used the amyl of nitrite till the face became flushed and she somewhat nauseated, the massage having been kept up during this time. There were no changes noted. She was then allowed to go home and was instructed to use the

nitrite of amyl inhalations and massage twice during the night and once in the morning before coming to the office.

In the morning, she was apparently much more composed and not so much disturbed by the condition of her eye as the previous evening.

She said that there was no change in the vision of the left eye.

The vision of the right eye was taken and found to be 16/40 with her correction —5.50 = —3 at 180°. Says the vision is as good as it has been in the past.

Fundus of both eyes normal. The pupils react to light. The objective examination showed both eyes to be alike and normal.

There was no examination made for anaesthesia of the cornea, conjunctiva or skin.

She was then tested with Hasselberg's color test types and colored glasses and it was seen that she had fair vision in the supposedly blind eye. The right field was taken and was found to be generally contracted but there was no reversal of colors.

Nitrite of amyl continued, and suggestive treatment begun.

The absence of any retinal odema showed conclusively that there was no embolism and contrast between the amount of vision found by the simple examination and by the test for simulation proved the condition to be of a hysterical character.

Two days later (9/23 '09). Eyes perfectly normal; pupils active. Says she can see better; can make out the outlines of objects on the walls a little better than two days before. On testing, the vision seemed limited to hand movements at 8 ft.

Tested with Hasselberg's type proved positively that she sees letters with the blind eye.

She continued to improve steadily.

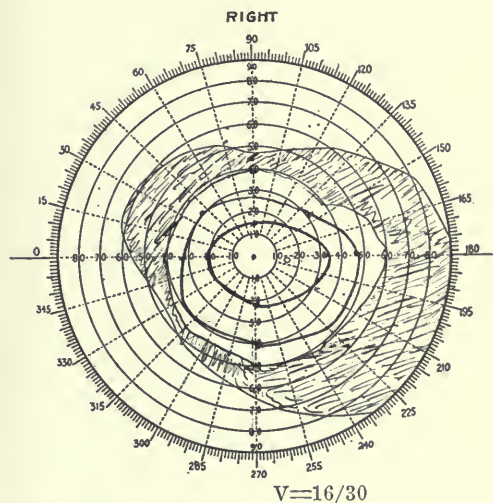
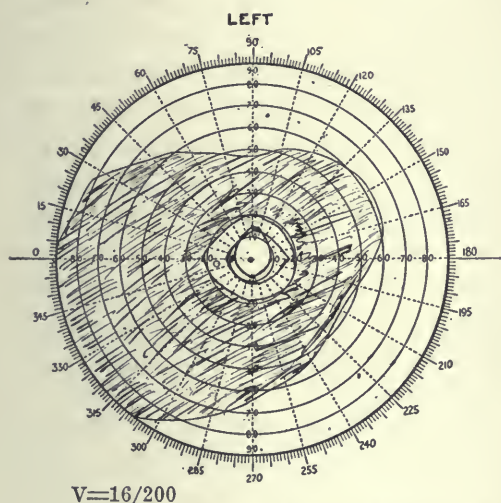
Sept. 30, '09. She was better in every way. With her correction of $-5.50 = -3$ at 180° before the right eye she read 16/30; in the left eye with $-4.50 = -3$ at 180° she read 16/200. Fields taken.

The right is very similar to the one taken ten days ago.

The left one shows a very marked concentric contraction, the field for white not extending beyond 20° in any direction while the field for blue and red were of

the onset. If the onset is associated with some nervous shock, frequently such a shock is necessary for recovery as in the following case of bilateral hysterical blindness associated with ptosis.¹

The patient, a young woman, had been blind for some months and was making no progress toward recovery. It was determined to frighten her. Accordingly one day while she was sitting quietly in her room some one shouted "Fire!" Others began to kick over the furniture



VISION TAKEN WHILE NEARING HER CORRECTION OF

R—5.50 = — 3 at 180°

L—4.50 = — 3 at 180°

almost the same size and extended to 10 degrees. There was no color reversal.

Oct. 14, '09. Vision in both eyes equal, i. e.: 16/30.

The patient has been seen since and is apparently well.

In all the cases I have been able to study the vision was regained suddenly. This is the only material point of difference between this case and those previously reported.

According to Kerneis the manner of recovery in these cases is usually similar to

and created a great uproar. The blind patient ran straight out of the house into the yard avoiding all obstructions. She then found that her vision had returned, nor was there a relapse.

Electricity has likewise been used successfully several times to restore vision.

Three cases have regained their vision while the refractive tests were being made, two of them under homatropine.

In those cases where the recovery is gradual there may be occasional relapses

¹Journal of Ophthalmology, Nov., 1893.

but the accustomed vision is usually regained.

In the amblyopic patients the impairment of vision may be associated with various color disturbances. As before mentioned, the field may be much contracted with or without color reversal—and, as in Mitchell's case the color field may be much enlarged. There may be even a complete loss of color perception, achromatopsia, as in a case observed last August.

I was asked by Dr. H. M. Cohen to see a patient that saw everything black. The condition came on while under treatment for a psychosis that was hysteric in character.

Dr. A. P. Herring who was in attendance on the case with Dr. Cohen has given me some information concerning the patient.

She developed a psychosis of a hysterical type after a disturbance at home over some money matters, becoming sullen and morose. Later, she was removed to a hospital for better surroundings and treatment. While in the hospital her mental state remained unchanged but she developed attacks of violence, tearing up sheets and pillow cases but never molested any of the attendants of the hospital. About this time the achromatopsia appeared. Her mental state slowly improved but the achromatopsia remained the same.

Dr. Herring regarded this condition as hysterical. Her family removed her to the country so that she could have the country air, change of surroundings and a quiet life.

I saw her here Aug. 20, '09.

Her general demeanor was quiet. She spoke as freely of her condition as her

poor command of English would allow. I obtained most of my information from her daughter.

The patient is a woman of about 50 years of age. Polish Hebrew, brunette of a fair physical development, intelligent and looked healthy. She stated that her vision was good but everything she looks at was black.

"A white person looked just like a colored person." There was a difference in the blackness of the face and the hair, or in the blackness of the collar or the blackness of one's clothes but she could not tell where this difference lay. It was evidently a difference in shades only. I could not take the vision but she said that it was as good as it had ever been.

Pupils equal and reacted to light. In a room half darkened, a poor light and small pupils, examination of the fundus was difficult and unsatisfactory. The fundus appeared normal and of the dark variety seen in brunettes.

She promised to come to the office for a more complete examination but she did not do this. I have since lost track of her.

Dr. Herring informed me several days ago, the condition gradually cleared up and that her vision had been restored when he saw her last which was about two months after my visit.

de Schweinitz says¹ "In this condition of hysterical achromatopsia, which was first described by Briquet, the patient is unable to distinguish color, although he recognizes the outlines and shape of objects. Everything appears, as has been well said, like a sketch in India ink. To the totally achromatic, the colors have a certain luminous intensity."

¹Posey and Spiller, p. 631.

These conditions of hysterical amaurosis and hysterical achromatopsia are very interesting and according to the literature are quite rare.

In the condition of hysterical amaurosis and amblyopia we have figures from cases gathered by those who have made an exhaustive search through literature to help us form an idea of the infrequency of the trouble.

As to the condition of hysterical achromatopsia no collection of cases has been made—and there seems to be so little written on the subject.

Are these conditions so unusual as the lack of reports would indicate? This is an interesting question. I do not believe that it is so rare. Many of the newspaper cases of marvelous cures of blindness are probably of this kind.

RE-DISPLACEMENT IN ADJUSTED COLLES' DEFORMITY.

PROPORTION :— CAUSE : REMEDY : : COLLES'
DEFORMITY : CURE.

BY

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The problem with which we have to deal is the third member of our proportion, the redisplacement in adjusted COLLES' DEFORMITY.

(1)

Having properly adjusted the broken ends of the radius in a case of Colles' fracture, if we know the exact anatomical mechanism of re-displacement, we have the first member of our proportion, the CAUSE.

(2)

If the application of the laws of mechanics and the scientific surgical principles which underlie the treatment of Colles' fracture can be made to fully overcome the forces producing the cause, then we have the second member of our proportion, the REMEDY.

(3)

If the relation between cause and remedy be not violated positive results should follow as the fourth member of our proportion, the CURE.

(4)

"Gray's Anatomy" gives the following anatomical mechanism:

"In Colles' fracture of the lower end of the radius the displacement which is produced is very considerable, and bears some resemblance to dislocation of the carpus backwards, from which it should be carefully distinguished. The lower fragment is drawn upward and backward behind the upper fragment by the combined actions of the supinator longus and the flexors and the extensors of the thumb and carpus, producing a well-marked prominence on the back of the wrist, with a deep depression above it. The upper fragment projects forward, often lacerating the substance of the pronator quadratus, and is drawn by this muscle into close contact with the lower end of the ulna, causing a projection on the anterior surface of the forearm, immediately above the carpus, from the flexor tendons being thrust forward. This fracture may be distinguished from dislocation by the deformity being removed on making sufficient extension, when crepitus may be occasionally detected; at the same time, on extension being discontinued, the

parts immediately resume their deformed appearance." (Also note levels of styloid processes of ulna and radius in fracture and dislocation at that site).

"The treatment consists in flexing the forearm, and making powerful extension from the wrist and elbow, (usually with anaesthesia) depressing at the same time the radial side of the hand, and retaining the parts in that position by well-padded pistol-shaped splints."

LAWS OF MECHANICS. In the study of levers, their mechanical advantages and disadvantages, we shall find the mechanical principles which govern the construction and use of splints and other restraining apparatus in the treatment of re-displacement in adjusted Colles' Deformity. There are three orders or classes of levers: First, Second, Third:

FIRST. P—F—R, the Fulcrum is between the Power and the Resistance. Scissors are a doubled lever of the first order.

SECOND. P—R—F, the Resistance is between the Power and the Fulcrum. The nutcracker is a doubled lever of the second order.

THIRD. R—P—F, the Power is between the Resistance and the Fulcrum. When a weight is held in the palm of the hand, the forearm acts as a lever of the third order; for the Fulcrum is at the elbow and the Power is applied through the tension of the muscles which are attached between the elbow and the hand.

RULE. *The mechanical advantage of the lever equals the ratio between the "Arm of Power" and the "Arm of Resistance."*

The amount of resistance required to overcome muscular power will vary according to the order of levers involved in

the muscular activity. The greater the mechanical advantage at which Power acts on Resistance the greater Resistance will be required to overcome Power, and *vice versa*; and the greater mechanical disadvantage at which Power acts upon Resistance, the less Resistance will be required to overcome Power, and *vice versa*.

In all orders of levers the amount of Resistance required varies inversely with the distance from the Fulcrum of the point of application of Power on Resistance; this variation will follow a change either of the distance between Fulcrum and Resistance, or with a change of distance between the Fulcrum and Power. If the "Arm of Power" is longer than the "Arm of Resistance," the Resistance required will be greater, and *vice versa*. (See scheme Second Order of Levers—Changed positions of Arm of Resistance).

POSITIONS OF "ARM OF RESISTANCE."

In the second order of levers when illustrated in its simplest form, the Resistance is between the Fulcrum and Power (Fig. 4), F—R—P, and all three points, Fulcrum, Resistance and Power, make one straight line. "F" (Fulcrum) in "Colles' Deformity" (Fig. 1) will be located at the site of fracture. "R" (Resistance), to be exact, should be represented at the distal end of the lower fragment; but for the purposes of better illustration, and still correct, "R" is found at the end of the fingers, for the position of the hand is directed by the lower broken end on account of the radio-carpal joint; and, again, because the muscle insertions on some digits, the metacarpus and carpus, enter into the "Resultant Force," or the "Arm of Power" which tends to re-displacement after Colles' Deformity has been first adjusted.

"P" (Power) is a composite point, and for the purposes of the diagram indicates the origin of the "Resultant Force," which is found from all muscles producing Power to turn the "Arm of Resistance." Since the Power *abducts* the "Arm of Resist-

erly indicated on the *abducted* side of "F" (Fig. 1).

P—R, the Arm of Power, is an averaged line called the "Resultant Force," found from the sum of all muscle power causing Colles' Deformity (Fig. 1). You will note

SCHEME, SECOND ORDER OF LEVERS:—POSITIONS OF "ARM OF RESISTANCE."

RIGHT HAND.

Muscle always exerts its Power directly from its insertion to origin, in accordance with the following diagrams from "R" to "P." ("R" represents the muscle insertion and "P" represents the muscle origin).

FIG. 1.



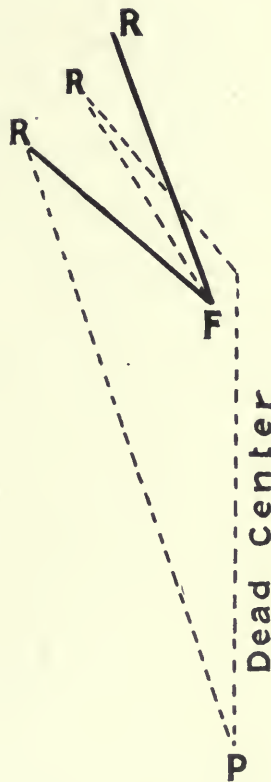
Colles' Deformity.
ABducted side of Fulcrum.

FIG. 2.



Straight Splint
"Dead Center,"
"Equilibrium of Power."

FIG. 3.



Pistol-Shaped Splint,
ADDucted side of Fulcrum.
Another "Dead Center."

ance" in Colles' Deformity, the point of Power origin must be located on the *abducted* side of the Fulcrum, otherwise the "Arm of Resistance" would not be turned to the *abducted* side. Hence, "P" is prop-

in Fig. 5 that when the Arm of Resistance makes its excursion from its position at Colles' Deformity (Fig. 1) to the pistol-shaped splint position (Fig. 3) the Power line turns from the *abducted* side of the

Fulcrum to the *adducted* side of the Fulcrum. The Power operated at first *before* the Fulcrum for *abduction*, but now it operates *behind* the Fulcrum, for the *adduction* of the hand, which is "the Arm of Resistance."

R—F is the "Arm of Resistance" and is represented by both hand and the lower end of the radius, jointly, because the hand is directed by the radio-carpal articulation, etc. The "Arm of Resistance" may now be likened to the spoke of a wheel, or the radius of a circle with the Fulcrum as the hub or turning point. When R—F moves from the straight line (Fig. 4) on its journey through the arc of the circle the excursion relatively increases the distance between Fulcrum and Resistance and relatively pulls R—P along with it. As "R" seeks to pull "P" upwards, the point "P" must actually approach "F" or there must be some equivalent action; and since "P" becomes closer to "F" the distance between Fulcrum and Power lessens, relatively, and the Arm of Power shortens; and it results that Power lessens and Resistance increases at every stage of the change. Since "P" is a fixed point (muscle origins) the Arm of Power does not shorten in fact by *actual linear measure*, but the muscle stretching necessitated to follow "R" in the excursion of the Arm of Resistance is attended with an increased loss of muscle power which will be represented as the *equivalent* to shortening the Arm of Power.

When the "Arm of Resistance" is reversed from its position seen in the "original" scheme to its position found in a straight splint there is found a "dead center." The "Equilibrium of Power" exists, where the Resistance equals the Power. The amount of loss of Power will be

represented by "x," and will equal the amount of Power overcome by the Arm of Resistance when in that site. When the Arm of Resistance turns to the *abducted* side of the Fulcrum and is found at the site of Colles' Deformity the amount of Resistance will be represented by "x" minus against controlling the *abducted* hand, etc.

Follow the line of Resultant Force, the Arm of Power, with which we started to overcome, seen in Fig. 1 (Colles'). When the Arm of Resistance passes from the *abducted* side of the Fulcrum to the straight splint (Fig. 2) and then on to the *adducted* side of the Fulcrum (Fig. 5) to the position in the pistol-shaped splint (Fig. 3) some muscle action estimated in the Resultant Force for *abduction* is wholly lost during the entire time the Arm of Resistance is on the *adducted* side; it is lost because some of the former *abduction* Power bears in a direct line from Resistance to Fulcrum, resulting in another "dead center" (Fig. 3). This will lessen some of the *abduction* power I am endeavoring to overcome.

It is to be remembered that muscle acts in a direct line from insertion to origin, in accordance with my scheme—from R to P.

The other remaining Power which formerly *abducted* the hand operates in a reversed order, because the muscle acts *behind* the Fulcrum. Add this balance to the special *adductors*; they together form another and new line of Resultant Force, the Arm of Power, which operates for *adduction* and the hand is pulled still further away from the site of deformity. Hence, Resistance becomes increased to "x plus" against the forces to be overcome. The Anatomical Mechanism producing re-dis-

placement in an adjusted Colles' Deformity with which we dealt at the start has not only become fully overcome by the pistol-shaped splint but much of the same Power which operated to produce the CAUSE has become changed in favor of the REMEDY mem-

known CAUSE can produce it. The pistol-shaped splint presents mechanical *disadvantages* against *abduction* and mechanical *advantages* for *adduction* of the hand when the Anatomical Mechanism is in operation in an adjusted Colles' Deformity. Such is not so with the straight nor any other

ORIGINAL SCHEME 2ND ORDER.

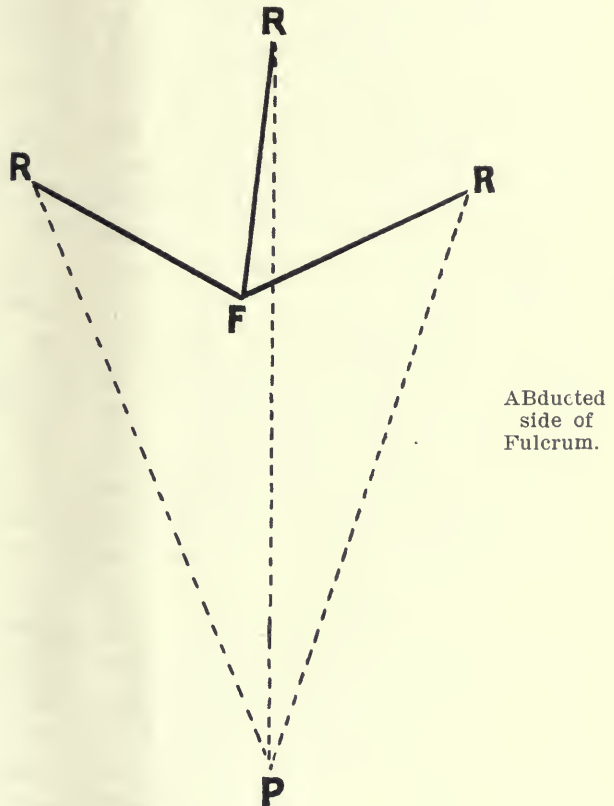
FIG. 4.



"R---P," "Arm of Power" is at rest; full Power can be exerted, termed the "Potential."

COMBINED SCHEMES—(1-2-3).

FIG. 5.



Excursion of the "Arm of Resistance" from "Colles' Deformity" to the "Straight Splint" and to the "Pistol-Shaped Splint."

ber of the Proportion, and added to the efforts for a CURE.

No Anatomical Mechanism can change the Arm of Resistance from the pistol-shaped splint to Colles' Deformity scheme, for it is a mechanical impossibility; only some external force separate from the

splint or restraining apparatus in Colles' Fracture.

Scientific Surgical Principles. Every fracture of the lower end of the radius within one inch of the lower articular surface of the radius is called a Colles' Fracture of the Radius. The lower fractured

end tends to be displaced outwards and upwards and widens the wrist, etc. (See Anatomical Mechanism).

In Colles' Fracture the deformity should be reduced and the ends of the damaged bone kept in proper apposition by suitable splint or restraining apparatus until the fracture is repaired. No splint suffices unless it overcomes all muscle action tending towards re-displacement, otherwise permanent deformity may follow. This is such a serious fracture that the surgeon should make every diligent effort to obtain the best possible results, for most men make their livelihood through the agency of their hands and the many and delicate movements of the hand and fingers are absolutely necessary for the full and proper use of that organ. It is different in the case of a limited joint in the lower extremity. A man can follow his usual occupation with a limited joint which is used mainly in locomotion, but he can not do so with a limited wrist or hand if engaged in any occupation above the class of laborer.

A mild degree of angular deformity in a case of Colles' Fracture is consistent with good results, but the many extreme deformities which are often found, are not at all justifiable in the practice of good modern surgery. The grooves found on the lower end of the radius lodge the tendons of the muscles controlling the fingers and these tendons work at best advantage in the normal lines which are nearly parallel with the long axis of the radius. The usefulness of the tendons when they are compelled to work at adverse angles lessens in proportion to the degree of deviation from their normal lines.

Inspection. It is never safe to put up a Colles' Fracture in plaster cast before the provisional callus forms; this is nature's

own temporary splint until the permanent repair is completed. Before the formation of the provisional callus the ends of the bone are liable to slip, more or less, and it is not wise to ignore this point in applying the treatment. When plaster has been applied and prior to the commencement of the process of the permanent repair it is impossible to ascertain, positively, whether or not there is perfect apposition, and we should never guess about it. Many of the deformities which we meet are due to a lack of diligence in inspection and the main aim of this paper is to indicate the cardinal points in the proper handling of this most important fracture after it has been properly adjusted.

Some surgeons use the plaster cast immediately or at least as soon as the swelling subsides and often with good results, but the wisdom of this practice does not commend itself to the careful surgeon. There may be many "so-called" authorities who claim that a high percentum of deformity in Colles' Fracture is consistent with good surgery. If every case of Colles' Fracture were properly adjusted and the correct ratio between CAUSE and REMEDY established, and in most cases it can be established, there would be better results. Many deformities I believe are the sequence of negligence, perhaps not strictly legal but certainly moral negligence, and modern surgery should demand that the percentum of deformities be considerably diminished.

If muscle actions pull the hand outwards and upwards in Colles' Deformity the hand should be reversed fully to the opposite—to the inner side and well down. To pull the hand to the middle line (straight splint) is insufficient, it but partly overcomes the causal forces. All the

best authorities use the pistol-shaped splint. They may have various names for their splints but they all retain the cardinal lines of pistol-shape.

After adjusting Colles' Deformity a temporary pistol-shaped splint should be used which will permit frequent inspections of the site of the fracture till the provisional callus forms; when by actual inspection of the site of fracture we know that the provisional callus has formed and that the apposition is correct, the pistol-shaped plaster cast should be used for several weeks. Good results should follow this treatment with a minimum of deformity. If any special adverse conditions arise they would positively demand opening the cast for another inspection.

EQUATION—CAUSE : REMEDY : : COLLES' DEFORMITY : CURE.

Knowing the Anatomical Mechanism which is the CAUSE in our equation, together with the Laws of Mechanics, pertaining to Levers, and the Scientific Surgical Principles governing the application of splints for restraining apparatus in Colles' Deformity, which represent the REMEDY, nearly every case of simple, uncomplicated Colles' Fracture can be reduced to the side of my equation CAUSE: REMEDY—with the result CURE; and if such known laws are applied intelligently in every case we should never see a case of severe angular deformity in uncomplicated Colles' Fracture.

Knowing the CAUSE and the exact REMEDY the same positive results should follow—the CAUSE completely restrained by the REMEDY and the COLLES' DEFORMITY substituted by the CURE. Not a single point in the REMEDY though can be violated and exact results secured.

The usual violations on the CAUSE: REMEDY side of my equation which disturb the equation and prevent complete substitution of COLLES' DEFORMITY by CURE are on the CAUSE side:—

Any external force without the confines of the Anatomical Mechanism—such as blows to the hand, accidental or otherwise, etc.,—and on the REMEDY side:—

The use by the surgeon of the plaster cast before the formation of the provisional callus, when he can only guess as to the condition of the apposition of the fragments before the permanent callus appears. This is a most unsurgical and unscientific practice being a violation of scientific surgical principles.

In view of the foregoing discussions it seems to be in violation of the well-known Laws of Mechanics when the surgeon uses the straight instead of the pistol-shaped splint; such a restraining apparatus does not present the greatest possible opposition either to limit or to overcome the considerable muscle power tending toward re-displacement, but permits certain muscles to act at a mechanical *advantage* for an *abducted* hand. Again, when he could have placed many such muscles when operating for an *abducted* hand at a mechanical *disadvantage*, and given a decided mechanical *advantage* to nearly all those other muscles which, when in operation, favor only an *adducted* hand.

SURGICAL HINTS.

Avoid multiple small incisions in palmar abscess, since they prevent proper drainage and may lead to stiffness of the hand. A single adequate incision is preferable for these reasons, and also because it affords a clear view of the site of disease, so that pus pockets are much less likely to be overlooked.

COMMON SENSE AT THE BEDSIDE.¹

BY

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"In that night did God appear unto Solomon, and said unto him, 'Ask what I shall give thee.'" "And Solomon said 'Give me wisdom and knowledge that I may go out and come in before the people.'"

He desired that he might show wisdom and knowledge toward his people. He asked not for wealth, or power or length of days, but to have a right knowledge of his relation toward his people.

So it seems to me that the physician should pray for common sense at the bedside. I feel that if I can put this faculty into play I can have some show to benefit my patients. It matters little what fine-spun theories are put forth they will finally fail if they do not meet this requirement.

"Did he impress you as a doctor? Did he seem like a doctor?" was asked me after I had been in consultation with the new doctor. I asked myself the question: "How should a doctor seem?" The answer came to my mind immediately. "He should seem just like a man who knows what to do and how to do it." It has always seemed absurd that a doctor should never think thoughts of his own, or try to do work his own way instead of following in the trail of others.

It seems to me that this society has not been living up to its mission. We try to shove the responsibility off on the other fellow, and try to get out of writing papers. We must get out of it or our society will become useless.

When I go to the bedside, after making the necessary examinations, I ask myself: "What shall I give this patient? What therapeutic measures are indicated? Why are certain things to be used in this particular case?" Then I ask myself after prescribing: "Just what effect will this treatment have on the patient? How will he be in an hour? or day? or week? Why did I prescribe that particular line? How does this particular treatment act?" Sometimes I can answer these questions, but generally I merely say: "It is orthodox, and I give it." "The books" say it is good, and I give it. I ask myself: "Why do the books say so? Did the author have definite scientific reasons for giving it? Did he know why he prescribed it, or did his information come from farther back? Had the remedies been clinically tested by him? Or was he taking someone else's empirical say-so?"

A certain author says certain conditions call for certain remedies. I prescribe on his authority. At my next call I expect to find a decided improvement, but my expectations fall flat. Instead of finding my patient better, I find him worse. Now where's the error? It lies in one of three places. The author erred, or I failed to make the proper diagnosis and application of the treatment, or the remedy is inert. How shall I know where the blame lies? I can eliminate the 3d condition by using only remedies put up by houses whose name is an absolute guarantee of the purity and activity of the remedy. As to whether or not I have given a proper diagnosis, that is more difficult to eliminate. But by careful study and clinical experience I can generally tell whether or not I am mistaken. Then the trouble lies with the author. Do we often stop to think that au-

¹Delivered before the Monongalia County (W. Va.) Medical Society.

thors often put stuff in their books more to fill up than to benefit people who try to follow them? Haven't the books often said that certain remedies are beneficial, and haven't we given them day after day or week after week without the slightest improvement in the patient? Don't we forget sometimes that the authors are only men? That we are also men? That we have as good right to think and apply ourselves and find out for ourselves as they? And it is easy to write and easy to get it printed and easy to make mistakes? But what I insist on is that if an author says a certain thing, and our observation says the opposite, we shall not follow him but follow our own sense. An author may not necessarily have had better opportunity for application of therapeutic measures than we have. Our minds have as good right to do some clinical experimenting as an author or any one else. It is our duty to gainsay any author's dictum if from our actual observation we prove him to be mistaken. And it is our duty to add our mite to the sum total of clinical knowledge if we have anything of special value to offer to our fellow practitioners. I have no doubt that we all have some specially good formulae that would be of great value to the rest of us if we were not too modest to present them to the profession.

I would like to earnestly protest against the common practice of ascribing great virtue to certain lines of treatment in ephemeral cases. There is such a tremendous tendency for a person to get well without treatment that if he is let alone, he will often get well as quickly without treatment as with it. Too many times we see some treatment highly extolled, whereas, if the patient had been given rest and food and light, he would have recovered equally as soon.

But what we want is to know that a certain procedure not only ameliorates but cuts short certain conditions. When we know that certain results follow the use of certain remedies every time, we can go to the bedside with a certain knowledge that we can give relief when most needed. After innumerable cases of good results along certain lines, our confidence in the application of drug medication to the treatment of disease grows stronger and stronger, and we feel that there is indeed something in the practice of medicine better than the nihilistic teaching of some of the authors. It is a great pleasure to see uniform and positive action from certain lines of treatment. It puts renewed and higher aspirations into our work. It makes us feel that ours is not a cold abysmal gulf of uncertainty; it makes us optimists. It gives us energy for renewed efforts. Finally, nothing adds to our high ideals so much as do the positive permanent results worked out from our application of therapeutic measures to the treatment of disease.

PHYSOSTIGMINE.

BY

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Eserine or physostigmine is one of the most interesting alkaloids in the entire list. Its qualities are so distinct and so important that it would be widely employed were these better known. With the object of calling attention to the properties of this valuable agent I present the following resume of its literature.

Physostigma contains at least two other alkaloids, one of which is only known to "resemble strychnine," the other exerting an action similar to that of eserine. Since

these exist in varying proportions it is evident that they seriously modify the action of the plant-drug, imparting a degree of uncertainty to it altogether out of place when dealing with so powerful an agency. For this reason the crude preparations scarcely made any impression on practice, but the profession began at once with the alkaloid, there being none of the "habit obstacle" in its way. But in proportion to the quantity of calabarine that may chance to be present, physostigma is more stimulant and less sedative than physostigmine.

Given in small doses—gr. 1/100 or less to an adult—physostigmine exerts a preliminary stimulant action, causing muscular twitching and increasing the irritability and the force of the muscular fibers. The pulse is slowed and vascular tension raised, respiration accelerated. The most decided effect is manifested on the musculature of the stomach, intestines, bladder, ureters, uterus and bronchi, all which are stimulated powerfully. The tears, saliva, perspiration, mucus and pancreatic juice are increased. The pupil is contracted but the eye accommodated for near vision.

In larger doses physostigmine slows and weakens respiration, slows the heart still more and relaxes vascular tension, depresses the nerve centers, and kills by paralyzing the center of respiration. The action on the heart is a direct one and is not exerted by stimulating inhibition. Marked sedation approaching collapse has followed single hypodermic doses of gr. 1/50. The general muscular force is decidedly weakened but the action on the involuntary muscular fibers and on secretion is increased. The temperature is slightly lowered, more especially that of the surface. When taken by the mouth

physostigmine induces paresis of the pharyngeal constrictors by a local action. Harnack considers the effect manifested a direct action on the secretory gland cells and the muscular fibers, but others attribute it to an action on the peripheral nerve-endings.

Physostigmine commences to display an evident action within five minutes, and by that time may be detected in the urine, by which it is mainly eliminated. The maximum of action occurs in thirty minutes and subsides within an hour unless sustained by repeated doses. Van Renterghem took gr. 1/100 every hour for five doses during the forenoon. By noon he felt slight vertigo, anorexia, non-painful gastric and intestinal peristalsis, coolness of surface, at 12.30 energetic bowel movements and *vomiting without nausea*, pulse reduced from 79 to 64, sweating, and by 2.30 all symptoms had passed away.

In one case when marked depression followed a hypodermic dose of gr. 1/50, relief followed promptly and permanently when the patient took a little glonoin, atropine and strychnine. The symptoms closely resembled those following an overdose of muscarine.

From this review of the physiologic action of physostigmine we see why it failed in epilepsy, chorea and tetanus, aggravating the convulsive tendency in each. In cases of strychnine poisoning animals die sooner if treated with physostigmine. The control of the central nervous system is weakened in these maladies, and the only benefit arises from the increase of elimination.

In the treatment of the morphine habit Dr. Waugh has obtained decided benefit from physostigmine in cases where the pupil is dilated after the morphine has

been stopped, but only then. The alkaloid so completely replaces morphine then that the patient can not detect the substitution. Yet this effect can be secured only from doses of not above gr. 1/100 twice each 24 hours, and the relief does not endure more than an hour, after each dose. It affords an interval of perfect peace then.

Physostigmine is the best remedy for flatulence due to intestinal paresis, and for intestinal torpor. It has recently been employed to clear the bowels before and after operations in the abdominal cavity, with excellent results. Dr. John L. Sagerson reports its use in two cases of fecal vomiting; in one it acted well but the patient was too far gone for recovery; in the other "the change was wonderful," and recovery ensued which was attributed mainly to this remedy. Subbotin found it useful in fecal impactions. With it Maschka cured a case of diarrhea with flatulence due to intestinal catarrh. With atropine to combat intestinal inhibition and strychnine to incite the nervous centers, physostigmine is a valuable remedy for intestinal torpor, and if not misused in too large doses plays an important part in curing this condition and the many ills dependent thereon.

Shoemaker finds this combination useful for the digestive troubles of women at the change of life; and in dilatation of the stomach. He denies its deleterious action in tetanus, and says more than half the cases recover under it. It should be pushed to full effect. In chorea, epilepsy and progressive paralyses, great improvement has followed its use. It has been applied successfully in infantile convulsions after chloroform had failed; and in tic, twitching of the orbicularis, writers'

cramp, obstinate hiccough; and Ringer and Murrell reported temporary improvement or arrested progress of paraplegia attributed to myelitis. They also found improvement follow its use in locomotor ataxia. Murrell succeeded with it in controlling the night-sweats of phthisis. De Giovanni combined it with ergotin for renal hemorrhages, with benefit.

In bronchitis, pulmonary congestion and pneumonia, Shoemaker found physostigmine useful by lowering the excitability of the vagus and the activity of the heart and respiration. Its tonic action on the bronchial musculature renders it of value in some cases of asthma and emphysema.

Experiment has demonstrated a decided antagonism between physostigmine and atropine on the one hand and pilocarpine on the other. Either of these might be utilized as antidote in case of poisoning, but atropine is preferable. The speedy elimination of physostigmine renders fatal poisoning impossible if respiration can be sustained.

The contradictions in the early reports upon this agent were due, as Wood justly states, to the presence of varying quantities of calabarine in the samples tested. Those of later date are to be attributed to the indiscriminating manner in which the alkaloid has been employed in any and all cases and conditions of any given disease. Take epilepsy, for example—the primary stimulant action of small doses at the beginning of a paroxysm would ensure its occurrence; whereas the eliminant effect would tend to prevent subsequent explosions. Cases requiring depression of spinal activity and reflex excitability would be benefited by this potent agent; while the lessening of cerebral control it induces would make worse such cases as strychn-

nine would benefit. Until remedies are applied with a nice comprehension of the exact pathologic disorders of function presented by each case we may expect such contradictory views.

Since physostigmine is a remedy that gets to work so speedily and is so quickly eliminated it is especially one well suited for the intensive method of dosage, a minute dose being administered every ten to thirty minutes until the exact desired effect has been secured. It partakes of the safety of veratrine, aconitine, gelseminine and pilocarpine in that it can not accumulate.

A CASE OF HYSTERICAL MUTISM.¹

BY

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Although this affection is known to us under this terminology ever since science treats of hysteria, it has been frequently mistaken, as in my own case, for a variety of diseases. Charcot was the first one to call attention to this disease as a pathognomonic sign of a functional disorder and not as it was hitherto understood to be a pure simulation; but to Krieshaber and Kussmaul we owe the scientific analysis of the *modus operandi* of the causes and progress of the disorder. Cartaz under the direction of Charcot catalogued the first twenty reported cases and after him Mendel, Dubois, Dutil, Gottstein and others reported similar cases.

¹Presented to the Section of Neurology and Psychiatry of the N. Y. Academy of Medicine, April 11th, 1910.

The malady occurs frequently. Sex, age or race constitute no exception. Among the causes we may mention traumatism, emotion, fright and worry. Its etiology is that of hysteria. In a great majority of cases the patient becomes suddenly mute, rarely it arises out of aphonia insidiously. The patient cannot articulate and while he simulates an effort to speak, as a matter of fact, he makes no attempt. His lips are perfectly immovable. Charcot nicely puts it when he says: "The hysterical mute is muter than mute, for the deaf-mute can articulate some sounds, but the hysterical mute can do apparently nothing." On examining the larynx we find no paralysis. In a paralysis we can observe some whispering, here not even this is a possibility. They feel a heavy tongue, that some impediment is in the buccal cavity.

Alongside of hysterical mutism we find some or many stigmata of hysteria, such as anaesthesia, dyschromatopsia or achromatopsia, concentric diminution of visual fields or reverse color field vision, globus hystericus, etc. The intelligence of the patient is entirely intact, he understands everything. The duration of this disease varies. In some it lasts days, in others weeks or months. Oppenheim speaks of cases reported lasting years. The cure is spontaneous. Treatment is suggestive only. This I shall illustrate in my case, which, on account of its peculiarity, I thought worth while reporting.

M. G., male, 40 years old, Austrian, married, tailor. Wife insane for the last seven years. Family history negative. Patient denies alcoholism or syphilis but smokes heavily. With the exception of pneumonia which he contracted ten years ago, was always well. Four years

ago, while at work, he claims to have been struck between his shoulder blades, taken quite unawares. This shock suddenly rendered him mute, from which he recovered after four hours. He felt as though the tongue was like a "heavy stone in his mouth." Two years after this accident he had a quarrel, during which he became mute for one day, again recovering spontaneously. About two years after this quarrel, he again quarreled and became mute. This time the condition lasted two days, from which attack he recovered spontaneously. A year ago he had some difficulty with his employer and after a violent quarrel became mute for fourteen days. This time I was called in to see him. I was told that the man was dying, that he did not partake of any food for two days and did not drink any water for a day, that in one hospital the case was diagnosed as a cerebral hemorrhage and in another as a laryngeal tuberculosis. The patient was lying in bed in an asthenic condition, refusing to move and perfectly mute. No focal signs or symptoms of an organic condition were discovered. Complete anaesthesia of the head and neck was present and upon being commanded to rise from bed, he at once responded. A glass of water was handed to him, which he drank with relish, after I had placed a strychnine tablet upon his tongue—this I did in the nature of a suggestion. After this he was able to say "yes." On the next morning the patient was brought to my office where I assured him most emphatically that he would speak within a few minutes. An application of the galvanic current along the course of the vagi in the neck made him speak at once. From that time on he was well until a week ago, when after a quarrel he again became

mute. He at once came to me and received his galvanization of the vagi and began to speak at once. This time his larynx and vision were examined. The examination of the larynx proved that it was normal, but he has a concentric diminution of his field of vision and a dyschromatopsia to blue and green.

111 Second St., N. Y.

THE SERUM TREATMENT OF GONORRHEAL ARTHRITIS.¹

BY

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There is very little to add to the serum treatment of gonorrheal arthritis since my publication in 1909.² I will take a few minutes, however, in order to discuss some points which I think are extremely important in the treatment of gonorrheal joints with anti-gonococcic serum. In a given case of arthritis, coexisting with or following, a gonococcus infection in some other part, usually the urethra, we must endeavor to determine whether the joint trouble is caused by the invasion of the joint or its membranes by the germ, or merely by its toxins. If the former condition exists, namely, that the joint or its membranes are invaded by the germ, anti-gonococcic serum has been worthless in our hands, just as it has in the treatment of all other infections with the gonococcus, such as urethritis, prostatitis, epididymitis, and so forth. As far as I know, clinically these two conditions are difficult to dif-

¹Read before the Chicago Orthopedic Society, March 10, 1910.

²*Illinois Medical Journal*, June, 1909, pp. 643, etc.

ferentiate, except in the cases in which we are able to aspirate and demonstrate the gonococcus in usual smears or cultures. It has been my experience that in every case in which I have been able to find the germ, the serum injections had absolutely no effect upon the involved joint or joints, but I have repeatedly seen cases which, from a clinical standpoint, I thought to be the type just mentioned, and to my surprise found that they responded to the serum treatment. From this, I think we must conclude that the toxemic form of gonorrheal joints is more common than those which are due to infection of the joint.

A number of questions have come up, both in my own work and from that of others who have used the serum, which I think might well be explained here. First, why do some cases in which the serum has been used with good results recur after a few weeks or months? Most of these cases recur because the source of the toxic material has not been eliminated before the use of the serum. By this, I mean the local infection should be cleaned up at the same time or, better, before the serum is used. If we do not do this, we are very likely to have a temporary relief of the joint condition, but sooner or later toxins will again be produced from the local infection, with a recurrence of the painful joints. I cannot too strongly urge the treatment of the local infection before or at the same time the serum is administered.

Another reason for the recurrence which we see in these cases is the insufficient quantity of serum given. We have found that unless the patient receives at least twenty-four to thirty c.c., (and in some instances we have found it necessary to give as high as eighty c.c.,) we are very likely

to have a recurrence. I will give the history of a case which serves to illustrate this point.

C. W. Contracted gonorrhea two and a half years ago. Three months later the right knee joint and the left ankle joint became very painful and swollen. He entered the clinic at Rush College the middle of October, 1907. On examination, we found that he was suffering from post-gonorrheal prostatitis and a bilateral seminal vesiculitis; that both joints mentioned were swollen and painful, and that he was able to walk only with the aid of two canes. He was treated for the prostatitis, and, after four weeks, was given an injection of two c.c. of serum. This was followed by two injections of six c.c. each, at forty-eight hour intervals. He was greatly improved after the second injection, and did not return to the clinic after the third, thinking that he was cured. About six weeks later he returned to the clinic in the same condition that he was when he first entered. He was then given five injections of six c.c. each, during a period of three weeks. He improved rapidly and after the fifth injection was entirely free from pain, although there still existed a slight disability from stiffness. Nevertheless, he had good use of his limbs and, as stated before, he was free from pain. I saw him as late as last August, and found him in good condition.

Another question which has come up is the partial relief that some users of the serum have experienced. Most of these cases are due to an insufficient dosage. Unfortunately, the serum has been placed on the market in packages containing three small vials, each vial having the capacity of two c.c. On this account, many have thought that this is a sufficient amount for a cure, and have injected two c.c. at short intervals until the patient had been given the contents of the three vials. This is just one good-sized dose, and most cases require much larger quantities.

I have made some observations as to the stability of this product and have found

that serum over one year old is not active. The serum is obtained from the uncastrated male sheep (ram). Immunization requires ten weeks. The animal is given weekly injections into the peritoneal cavity; the first three injections are from dead cultures; the last seven from live cultures. The quantity of these injections is gradually increased. The cultures are grown for twenty-four hours on ascitic agar. The serum is polyvalent, each culture being taken from six to eight strains. Recently, I have used a monovalent serum, but found the results about the same as with the polyvalent serum.

At the present time we are using a serum produced from the horse, and although our experience as yet is rather limited, nevertheless, it seems as though the reaction from this product is just as mild, if not more so, as the ram serum and the results just about as good.

100 State St.

OPTIC NERVE AFFECTIONS DUE TO ETHMOIDITIS.

BY

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The optic nerve is more liable to become affected by intoxication than the motor or sensible nerves; and especially poisons introduced from outside into the body are able to produce either primary atrophy of the nerve-fibers or inflammation of the interstitial tissue with consecutive atrophy. I refer here to the intoxication with ethyl and methyl alcohol, with the organic arsenical preparations, especially the atoxy-

lon, with the nicotin and so on. On the contrary, poisonous substances produced in the body itself affect the retina and induce here changes partly inflammatory, partly degenerative as for instance the retinitis due to nephritis or diabetes or leukemia, the starting point being in all of them the production of some noxious substances and their presence in the body while in the beginning their action is restricted to the retina.

I wish to call your attention today to two cases of optic nerve affection due to poisonous substances produced in the body itself, which toxins in my opinion originate in purulent inflammation by the action of microbes. Both of my cases have an ethmoiditis as starting point but differ widely in their clinical course. Both patients are from my service at the N. Y. Ophthalmic and Aural Institute.

The first concerns a woman of 25 years. When I saw her first in the early part of April there was a severe phlegmonous inflammation around the lacrymal sac, exophthalmus, chemosis, edema of the lids: i. e. phlegmon of the orbit. The refractive media of the eyeball were clear, but the disc showed some venous hyperemia. The vision was reduced to recognizing movements of the hand. There was very severe pain, temperature of 101° and extensive suppuration of the ethmoidal cells.

Until two days ago the patient had felt well but for some discharge from the nose and slight sensibility of the lacrymal region. There was no doubt that we had to deal with a perforation of an ethmoidal empyema into the orbit and it was to be feared that there was already a thrombosis of the central vein of the optic nerve be-

ing the usual cause as far as we know of the blindness in phlegmon of the orbit. Of course, the prognosis is bad under such conditions. But I considered that we possibly might have to deal only with an intoxication of the nerve and if that was the case still an operation rapidly performed was able to secure a good vision.

Therefore before an hour had elapsed the patient was on the operating table. I made a large incision from the eyebrow around the inner angle of the eye until to the lower orbital margin, carrying it down to the bone and removed the periosteum backwards until I had found the perforation in the orbital ethmoidal plate and a pus cavity extending from there into the orbital tissue. I allowed to escape as much pus as possible but refrained from a radical operation of the ethmoidal cells as it is not without danger in this acute stage according to my experience. I introduced wet gauze into the depth of the wound and applied wet dressings.

The fever and pain ceased immediately and two days later the patient was able to count fingers at one meter distance, "at the 6th of April the vision was 5/200, exophthalmus had almost disappeared; at the 21st, the vision being 20/50, the wound granulating well I evacuated from the old wound all the anterior ethmoidal cells, made a large opening into the nose, introduced a strip of gauze from there into the nose and another one through the lower part of the wound while I closed the upper part with sutures. There is still a tampon in the wound but it is closing and I have no doubt that an after-treatment from the nose will give us a complete cure. The vision is nearly normal and the hyperaemia of the disc has nearly disappeared, but it has become rather pale, which

proved how severe the attack had been.

In the second case, we had to deal with a direct influence of the inflamed ethmoidal cells on the optic nerves, situated in close proximity of the posterior ethmoidal cells. The patient 45 years of age, came to see me at the 12th of April, because his sight has been diminishing for five months. I found on the right eye a vision of counting fingers immediately before the eye, the left eye, with four diopters minus, counted fingers in 5 m. Pupils were wider than normal, especially the right one and reacted very slowly to light. Media normal; temporal halves of both discs quite white. Visual field of the left eye somewhat contracted from the temporal side. No colors recognized. The right eye sees movements of the hand only in the upper nasal quadrant.

No symptoms of locomotor ataxia, or of tumor of the hypophysis, to which the condition of the field and the temporal pallor of the disc appeared to point. Intraocular tension normal. I sent the patient to Dr. Tieck, who found suppuration of both ethmoidal bones, and on my request removed the middle turbinates and treated the ethmoiditis.

Since that time three weeks have elapsed and there is a slight improvement of the left eye, the right remaining unchanged. The vision of the left eye has increased to 1/10 and red and blue are recognized in the periphery, a large central colors-cotoma being present.

It seems to be uncertain if the further improvement will be a considerable one as a great quantity of the nerve-fibers have already undergone degeneration. We have to suppose that toxic substances from the suppurating ethmoidal cells entered the optic nerve five months ago and produced there a chronic inflammation and

partial degeneration of the nerve-fibers. An operation on the ethmoidal bone at that time would have stopped the inflammation and probably have saved the vision as it is reported in many cases in literature. But the nerve-fibers can stand the noxious influence of the toxins only for a certain time; this is of shorter duration when the pus is in the very neighborhood of the optic nerves as in my first case and extends over weeks and months if the pus is enclosed in the ethmoidal cells and penetrates through the thin bone only in small quantities. After that time the nerve-fibers degenerate and then they cannot recover.

It is therefore of the utmost importance to think of ethmoiditis in cases of optic atrophy of unknown origin. The characteristic symptoms are considered to be in the onset diminution of central vision, pallor of the temporal halves of the disc and central colorsclotoma.

CORRESPONDENCE.

THE TREATMENT OF PNEUMONIA.

BY

GEO. M. AYLSWORTH,
Collingwood, Canada.

Editor AMERICAN MEDICINE:

Dr. Kahrs' paper in your June issue starts off by saying that "Treatment of pneumonia has been so thoroughly discussed here and elsewhere, *that to add to what is known seems superfluous and out of place*" (!!!) and concludes, "There is no specific to date." "Superfluous and out of place"—to try and learn something that will lessen the unnecessary enormous and increasing death rate of pneumonia forsooth!

Surely such statements will produce an aftermath to your able and instructive

pneumonia symposium in your April issue.

It seems, should this escape the maw of your waste basket, a good chance to use the treatment of pneumonia to press upon the attention of *your* readers, views of internal medication I have been presenting to the profession at medical societies and in different journals for fourteen or fifteen years. I embrace this opportunity in the hope that I may shake the conservatism of 15 or 20 out of your 15,000 or 20,000 readers; enough to induce them to quit the game of "follow my leader"—they have been playing and think for themselves.

I must, however, premise that I am unable to follow Rokitsansky if he did, as you claim differentiate lobar and lobular pneumonia; for it seems to me that lobar and broncho-pneumonia is a satisfactory division of the acute type.

I hold as a working hypothesis that the first departure from health in the majority of diseases is derangement (stimulation, alteration, depression) of the sympathetic or trophic nervous system, which results in diminished functional efficiency. This permits the various pathogenic germs to get in their work and establish organic or pathological changes, provided they are not interfered with by our art or the defensive forces of the diseased body.

The acknowledged leaders in medical science have been earnestly studying germs and these pathological changes exclusively, to gain light upon their treatment; leaving to the rank and file upon the firing line the duty of meeting disease while functional, which means, before demonstrable permanent pathological changes have occurred. In this, the latter have met with some success—the treatment of pneumonia being notably one of these successes.

Among my earliest recollections is having my face and pinafore well sprinkled with blood from a robust man suffering from pneumonia upon whom my father was performing venesection in due and ancient form. Sixteen or seventeen years later I saw my preceptor—a professor in one of Toronto's medical colleges, treat with varying success, all types of pneumonia with the ant. et potass. tart. Since I began to practice I have seen aconite

and veratrum viride placed upon the pedestal of *The Treatment for Pneumonia*—only to be discarded. Some criticism is in the air but strychnine occupies the pedestal now, and in the way it is generally used is as successful in curing pneumonia as the use of a spur is in curing an exhausted horse.

Do such experiences justify us who are on the firing line, in accepting Kahrs' view that there is nothing new to be learned about the treatment of pneumonia, or in blindly following "the greatest Roman of them all" who having passed his 60th birthday has been translated to a higher sphere from whence he exhibits his conclusion exuded from his purely hospital experience—that the non-surgical treatment of disease consists in a "little nux vomica and hope" or from our view point, are these changes warning wrecks upon the shoals of superficial thought?

In reply it may be said that, for at least 15 years, I have regarded aconite and ver. vir. in lobar and tart. ant. in bronchopneumonia as specifics; where accompanied with treatment based upon the general principles so well set forth in your symposium, though actively engaged in general practice for these fifteen years I have not seen a death from acute pneumonia under my treatment. But I have seen one of my patients die under the suggestions of consultants who insisted upon increasing doses of strychnine and oxygen. My adoption of aconite and veratrum is based upon the aforementioned working hypothesis and because I do not believe a drug can act as a stimulant one minute and as a depressant the next; but having advanced and defended these points to the best of my ability elsewhere without being driven from my position, it would be inappropriate to discuss them here and now, even were space available. But granting the hypothesis, it is a mere corollary that depressed nervous energy could be raised, and excited nervous energy could be depressed to the normal, provided we had the agents; as we have in aconite and veratrum respectively. Is it worthy the intelligence of the profession to have its members expect to produce these two results with a single agent? And yet that is exactly what the profession, in-

cluding myself in the first instance, did expect, if we are to judge from their clinical use. Who has used aconite and veratrum separately and has not been astonished at their marvelous effects for good and evil, but only semi-occasionally does an obscure physician differentiate between sthenic and asthenic cases of pneumonia and point out to supercilious confreres that aconite should never be used in sthenic cases and veratrum should never be used in asthenic cases. Such a charge of stupidity against the mass of the profession could not be sustained did not Dr. Kahrs advise aconite without differentiating between sthenic and asthenic pneumonia, and Dr. Butler in your symposium either follows or accompanies the alkaloidalists in their use of aconitine, digitalin and veratrine in one tablet.

Believe me, brethren, that any intelligent physician having grasped the ideas herein advanced as to sthenic and asthenic pneumonia and the administration of aconite and veratrum in its treatment will promptly learn from experiment at the bedside that these drugs are not only as much specifics in lobar pneumonia as quinine is in malaria, but the same principles apply in many other diseased conditions. I am well aware that these views because they ignore to some extent the bacterial origin and vaccinal treatment of pneumonia, will not be received with extreme cordiality by the ultra scientific.

But when contributors to your symposium like Drs. Wm. P. Northrup and H. A. Heiman claim that the pneumococcus causes pneumonia in the ear, in the precordium and the heel, and F. E. Stewart concludes his paper on vaccines by expressing the *hope* "that a verdict may be reached supported by sufficient evidence to make it conclusive" as to their efficiency; ordinary physicians like myself may be excused if in the meantime they look elsewhere for aid in their ever present fight against disease or continue to use their old and tried remedies.

SURGICAL HINTS.

Deforming cicatrices of the face following burns are best completely removed and the space filled in by skin grafting.

ETIOLOGY AND DIAGNOSIS.

TREATMENT.

Three Points of Importance in Intestinal Obstruction.—Dr. W. J. Mayo (*Lancet-Clinic*) says: "In acute intestinal obstruction I think there are three points so important that every surgeon of large experience must have had them brought to his mind time and again. First, do not give cathartics to a patient if you suspect intestinal obstruction. I have noticed particularly that the cases that have been brought to us practically in a moribund condition, have had catharsis early, and thereby their chances of recovery have been diminished to a very serious extent. Second, do not give opium, because it masks the symptoms, and our only hope of recovery from operation lies in getting the patient to operate on early. Third, do not give food."

The Diagnosis of Trichinosis.¹—Thompson says that there should be no difficulty in determining promptly a correct diagnosis of trichinosis based upon the observation of the following symptoms: 1. Acute onset usually with vomiting and abdominal cramps. 2. A high grade of eosinophilia, invariably present; usually above thirty per cent. and frequently much higher—even above eighty per cent. 3. A high grade of temperature, often reaching 104° F. or more, and lasting, in lessening degree, for two to six weeks. 4. Puffiness of the eyelids and face, with pains in the eyes occurring in one-fourth of the cases. 5. Dyspnoea and diaphragmatic breathing occurring without cyanosis in about one-fourth of the cases. 6. The generalized muscle pains, cramps, soreness, and prostration, causing sometimes deceptive apparent immobility. 7. The sudden occurrence of symmetrical circumscribed corneal hæmorrhages in a patient whose blood-vessels are not degenerated, should give rise to a suspicion of trichinosis.

The Successful Treatment of Tuberculous Fistulæ.¹—There is little or no doubt that oxidation and allied conditions often act inimically upon aerobic as well as upon anaerobic bacterial lesions, and the fact that many a chronic case of empyema is hastened in its healing by oxygen put into the wound by means of a sterilized glass cannula attached to an oxygen cylinder is familiar enough. There are certain other conditions, however, in which the application of oxygen in this way is less easy, and the use of certain oxidizing agents may be resorted to instead. The effectiveness of potassium permanganate crystals inserted into a snake-bite immediately after its occurrence is known to many people who have lived in the Tropics. It is probable that potassium permanganate acts in a somewhat similar way when it is used in the manner advocated by Dr. Scobie for the cure of tuberculous fistulæ.

Amongst other cases he had a male patient, twenty-eight years of age, who suffered from tuberculosis of the left lung and from two tuberculous areas in the region of the anus. These were situated to the left of the anal aperture, each being half an inch in length and apparently healed, but examination in a good light showed that they were still discharging a little pus; to the right of the anus there was a bluish unhealthy-looking swelling about the size of a bantam's egg, the residue of an ischio-rectal abscess which had been incised but which had filled up again. When opened it discharged a tablespoonful of thick pus. Careful probing of all three lesions did not reveal anything in connection with the bowel. The patient was in a very emaciated condition, and would allow of no further operative treatment. Crystals of potassium permanganate were introduced into the healthier of the two fistulæ after it had been carefully washed out. The patient experienced a sharp pain lasting about a minute, but there was no other discomfort; the treatment was continued for three weeks, the crystals being allowed to dissolve slowly in the feeble discharge. The result was a per-

¹W. G. Thompson, M. D., *Amer. Jour. of Med. Sciences*, Aug., 1910.

¹*The Hospital*, July 16, 1910.

fect healing of the fistula. Dr. Scobie, thus encouraged, packed the other in the same way twice a week, and in two months' time it also healed up finally. The ischio-rectal abscess was now washed out with hot, freshly made permanganate solution, the interior being thereafter filled with crystals of permanganate of potash. The cavity being larger than the others had been, the patient experienced more pain, and this lasted about an hour after the crystals were inserted, but the effect on the discharge was considerable and marked. The general health of the patient continued good, and the cavity steadily shrunk up until presently there was no pus visible except at intervals of a week or ten days, and in due course the wound healed as the others had done.

Constipation in Childhood.¹—To combat constipation in infancy, Poynton says it may be quite sufficient to use manna, which should be dissolved in hot water and strained through muslin. This remedy, no doubt, often fails, but it is very satisfactory when effectual, and for this reason worthy of trial. Some light massage along the colon will help these cases. Salines are most valuable remedies. The secret of the successful use of salines lies in their regular employment, in sufficient dosage to produce a thorough relief of the bowels. The initial dose must be an experiment, but once ascertained, it should be persisted with until a regular habit had been established and then should be diminished cautiously. If too little is given, griping pains and distention may result, and if too much, the motions will become unduly frequent and liquid.

A likely prescription for a child 2 years of age would be:

	gm. or cc.	
Magnesii carbonatis	66	gr. x
Sp. chloroformi	13	mii
Syrupi	I	mxv
Aquæ	8	ʒij

To be taken twice a day—after meals.

It would be necessary, if there has been constipation of some standing, to give a

dose of calomel or grey powder before commencing the saline treatment. Castor oil is well known as a very safe aperient, but has the disadvantage of intensifying the constipation if used in occasional doses. In spite of this it is invaluable when it is necessary to clear away curds in milk dyspepsia, and it can then be followed by mild salines. If a small and delicate infant has to be treated, the castor oil can be given with an equal part of pure olive oil. Castor oil has another useful function in young children, when there is irregularity of action of the bowels. In this particular class of cases there is at one time constipation, at another diarrhea. Small doses of this drug given once, twice or thrice a day will often correct either of these irregularities. Five minims given in a mixture with a carminative twice a day is an average dose for a child of 12 months.

When the constipation is associated with deficient hepatic action, indicated by pallor of the stools, grey powder is a useful remedy, and this may be combined with powdered rhubarb as follows:

	gm. or cc.	
Pulv. hydrargyri cum creta.	06	gr. i.
Pulv. cinnamoni	03	gr. ss.
Pulv. rhei	12	gr. iii.

Fiat pulv.

To be given at night.

Poynton has used phenolphthalein in a considerable number of cases of constipation in mentally deficient infants and children, and he has found it sometimes very convenient and efficacious in these cases in doses from $\frac{3}{4}$ of a grain to 2 grains.

Tuberculosis of the Elbow.¹—Sever concludes his valuable paper as follows:

Tuberculosis of the elbow occurs early in life and often after trauma.

There is an equal chance in a given case of abscess formation. The disease may appear in the head of the radius or in the olecranon or in the lower end of the humerus, and later invade the joint.

The best treatment is rest and fixation with the arm at a right angle and the forearm midway between pronation and supination. Ankylosis is to be expected in

¹F. J. Poynton, F. R. C. P., London, *Practitioner*, May, 1910.

¹H. M. Sever, M. D., Boston, *Med. and Surg. Jour.*, May 19, 1910.

at least one-half of the cases, with very slight to good motion in the other half.

Resection of the joint is only to be done after careful consideration of individual cases and when the whole joint is disorganized from disease, or ankylosed in a bad position.

Ankylosis is to be expected following resection of the elbow joint.

The average course of the disease is about two and one-half years.

The Treatment of Burns.¹— There are four things to demand attention in the successful treatment of burns, says Fancher, any one or all of which may be required in a given case; first, to combat shock if it exists; second, to relieve pain and nervous excitability; third, to prevent infection and to protect exposed living tissue; and fourth, to assist Nature in her work of repair.

1. Shock, which often occurs as a result of severe burns, is treated on general principles too well known to the profession to be discussed in this paper. Some one has said, "Shock is shock," meaning that regardless of its cause, shock must be treated in the same manner under all conditions.

2. To relieve pain and nervous excitability, it is usually necessary to give a hypodermic injection of morphin and atropin and then to immerse the burned area, if it be on an extremity, in cold water to which has been added a tablespoonful of bicarbonate or chlorid of sodium to the gallon. It is not necessary for the water to be ice-cold. A temperature of from 50 to 60 F. is preferable.

If the burned area cannot be immersed in water on account of its location it may be covered with a light smooth cloth which has been dipped in the solution; then by gently and continuously mopping this cloth the same result will be obtained.

This water-bath may be continued for some time or until the systemic effect of the morphin is manifest.

In institutions where trained assistants are always at hand the whole bath may be

used and continued for many days if a large area of the surface of the body is burned.

3. Protection of the tissues and prevention of infection demands our greatest efforts and must be kept in mind from the beginning. Nature puts forth her greatest efforts, and the system will exhaust its entire resources to accomplish this end; but Nature cannot prevent the invasion of pus-producing micro-organisms—the surgeon can.

I wish here to condemn two things often done, and at least sanctioned by most of our text-books: first, puncturing blisters immediately after a burn and second, the use of carron oil and other remedies of its kind as a protecting dressing.

A blister is a non-irritating protection to the delicate underlying structures, and the surgeon can furnish none.

When the patient is fairly comfortable the bath may be discontinued, and the burned area with the surrounding surface sprayed or mopped with peroxid of hydrogen. The entire surface should then be mopped dry with gauze. Then strips of gauze which have been previously soaked in the following solution should be applied over the entire area.

	gm.	or	c.c.
Picric acid	4		3i
Alcohol	64		or 3ii
Water	72		O.iss

Over this a thin layer of cotton should be applied. The dressings should be kept in position by loosely applied adhesive strips or a roller bandage. This dressing soon dries and may remain for several days, or until it becomes soiled; at which time remove all soiled or wet dressings, spray with peroxid, mop dry and reapply fresh gauze soaked in the picric acid solution.

After the third day the larger blisters should be opened and the fluid contents mopped away and fresh dressings applied. This treatment is applicable to all burns whose severity is not great enough to cause sloughing.

If sloughing does occur as a result of charred tissue or later as a result of infection, the dead tissue should be removed as rapidly as it becomes separated, and the underlying exposed surface sprayed with

¹H. L. Fancher, M. D., Chattanooga, Tenn., *Jour. A. M. A.*, July 2, 1910

peroxid, and mopped with the picric acid solution; over this should be applied small strips of rubber tissue which have previously been soaked in 1:1000 bichlorid solution. The dressing should be finished as before suggested.

The picric acid solution, by its slight astringent action, limits the exudation of serum by constricting the congested superficial capillaries, and does not interfere with the development of new epithelium. Its germicidal action prevents infection, and in my hands has never produced any systemic toxic effect.

The rubber-tissue strips furnish a non-irritating covering to the denuded surface, and do not interfere with granulation in their removal. If the rubber tissue is applied in narrow strips, the edges being allowed to overlap, the dressing more perfectly conforms to the irregularities of the surface. The dressing should be changed as often as it is necessary to keep the surface clean and free from pus.

The Non-Operative Treatment of Hemorrhoids.¹—By the proper use of certain measures the pain can be relieved, inflammation diminished, and the size of the piles reduced, and they may remain so for weeks or months, until some cause starts up the inflammation again. Nothing can be expected from this line of treatment in the way of a permanent cure. It is only palliative at best, but a great deal or almost entire relief can be afforded for some time; therefore it is proper to adopt this treatment if there is any good reason, owing to the condition of the patient, why the hemorrhoids should not be removed.

To obtain good results from this line of treatment, it is necessary, as far as possible, to correct any existing disease of the heart, blood vessels or liver, and any debilitated condition of the system which may exist, but all medication should be avoided that will induce constipation. Remove any obstruction of the colon or rectum, which may exist from pressure by other organs or from constipation. If necessary to overcome the latter, give a small dose of a saline cathartic every morning to obtain

one or two movements, such as a teaspoonful of Epsom salts, Carlsbad salts, sal hepatica, phosphate of sodium or seidlitz powder. These not only remove any hard irritating fecal matter that may be in the bowels, but they exert a beneficent effect upon disease of the liver and portal system which is so frequently associated with hemorrhoids.

The local treatment consists in reducing the inflammation and strangulation of the piles as soon as possible. To accomplish this the patient should be put to bed, and hot poultices or ice bags applied to the parts, whichever feels the most comfortable, or soothing applications may be used, as lead and opium wash or witch hazel. I have frequently had good results from the application of antiphlogistine when the piles have been external and strangulated. The following ointments may be employed:

℞ Morph. sulph.gr. v
Extr. hyoscyamigr. v
Ung. zinci oxid.3 i
Bismuth. subnit.5 ii
Hydrarg. chlor. mit.gr. L
Morph. sulph.gr. v
Zinci oxidi5 ii
Vaseline3 i

Sig. Apply to parts morning and evening.

Dr. Gant, of New York, recommends:

℞ Morph. sulph.gr. viii
Hydrarg. chlor. mit.gr. xii
Vaseline3 i

Sig. Apply freely in the rectum to the tumors.

Dr. Andrews recommends this suppository:

℞ Pulv. opii,
Ext. bellad.aa gr. x
Ol. theobrom.q. s.

Divide into five suppositories. Sig. Insert one when required.

Treatment of Ringworm.—The several antiseptics advocated for outward application in cases of ringworm are far from satisfactory, the prolonged duration of the disease proving their inefficiency. In dealing with the numerous cases of pediculosis in fever wards, E. Lynn Jenkins reports in the *British Med. Journal* that he and his associates always employ the essential oil of sassafras, which, without exception, they find acts as a specific in such cases.

When both pediculosis and ringworm occurred in the same scalp, it was noticed

¹W. H. Hodson, M. D., *Int. Jour. of Surgery*, Aug., 1910.

that the latter disease also reacted favorably to this preparation.

This led them to test the possible usefulness of the oil for ordinary cases of ringworm, and so far the results have been most happy. The hair is cut closely around in order to identify the patches, the application of the oil being made twice a day by means of a camel-hair brush. This is continued for a few weeks, as the case indicates. No irritation is produced, while the preparation is most pleasant to use. Not only is the spread of the infection prevented, but that the fungus is being destroyed with certainty is recognized in two or three weeks, by commencing development of fine hairs.

THERAPEUTIC NOTES.

An Antidote for Alcohol.—Hennell, in the *Electric Medical Journal*, lays great stress on the good results which can be obtained by the use of ammonium chloride in the treatment of alcoholism in all its phases. According to the author, 30 grains of the drug dissolved in a drachm of water and given at one dose, followed by a copious draught of water, not only will counteract the effects of the alcohol and sober the patient rapidly, but will prevent the onset of delirium, and overcome the craving for alcoholic stimulants. If after the ingestion of the drug the patient has not quieted down in the course of two or three hours, some hypnotic, such as chloral hydrate or a bromide mixture, should be given. As a rule, when the patient awakes after this treatment there will be felt no craving for alcohol. The author points out that while 30 grains may seem a very large dose of ammonium chloride to give in view of the gastrointestinal irritation which it is said to produce, when given as an antidote for alcohol only a single large dose is administered and that this is followed by a copious draught of water.

The Treatment of Multiple Abscesses.
—In many cases it has been found that

abscesses may be completely dispersed by the following method, which has been very successful for abscesses in the neck. The skin having been scrubbed with a boiled nail-brush, several layers of gauze soaked in ether are placed upon the prepared area and the compress covered with oiled silk and bandage. Frequently a corner of the dressing is raised and enough ether poured on to moisten the gauze. In a few days cure may be looked for almost with certainty.

Alum and Ingrowing Nails.—According to the *American Journal of Clinical Medicine*, every case of ingrowing toe-nail can be cured in five days by the free application of dry powdered alum. No pain attends this form of treatment, and the destruction of the diseased tissue results in the formation of a hard resistant non-sensitive bed for the nail with a cure of the ingrowing tendency. The non-toxicity of the alum, its easy application, and the good results obtained from it render it the treatment of choice, at least in cases where no operative measures are contemplated. A soap-and-water fomentation is first applied for twenty-four hours, and then the alum is applied to the space between the nail and its bed; a tampon of cotton-wool is next placed on the alum, and the applications repeated daily. Suppuration rapidly ceases, the parts dry up, and pain and discomfort vanish almost at once. At any rate, the method would seem worthy of trial.

Trichinosis.—Oedema with slight erythema (*The Hospital*) over the swollen tender muscles is very suggestive. In its most characteristic form the oedema occurs in the eyelids and over the eyebrows, and when this appears early in the disease its diagnostic value is considerable. In the hands and feet oedema usually occurs late.

Camphoric Acid and Night Sweats.—The night sweats of phthisis (*The Hospital*) are probably due to a variety of factors, acting directly or indirectly through the nerve centres. Camphoric acid, given

in two doses of 30 grains each during the day, has often been effectual after all other measures have failed to check them. It is more effectual when given in the form of camphoric acid internally than when applied in the form of camphor or camphorated alcohol externally. Camphorated alcohol rubbed into the skin may assist the effects of camphoric acid given internally, but of the two it is the internal remedy that affords by far the greatest benefit.

Balsam Peru in the Treatment of Wounds.¹—Sickmann reports his experiences with Peru balsam from the surgical clinic in Erlangen, in which it has been employed systematically for a number of years. The balsam proved to be very useful in all cases of accidental wounds. It is necessary, however, that all the recesses of the wound be filled with an excess of the balsam, since it only acts efficiently when any bacteria present are completely enveloped in it. No toxic disturbances need be feared. In cases of infected wounds, discrimination must be observed in its use, and this can only be gained by experience. The balsam appears to have a favorable influence in stimulating granulations.

GENERAL TOPICS.

Pregnancy and Labor of one of the Siamese twins.²—There live in Prague twin sisters, known as the "Siamese twins," who are united to each other by a solid bridge of tissue, with some cartilage and bone enclosed, in the region of the hip-joint and the brim of the iliac bone. Several attempts at separation have been suggested, but refused by the twins because they desired to exhibit themselves for money. One of the twins suffered a few years ago from cholelithiasis, and had to be operated on in the surgical clinic of Prague, where examination revealed that apart from the malformation of the connecting iliac bone, the two persons have separate and independent

bodies and independent bodily functions. A few days ago the twins, now 36 years of age, again came to the clinic, as the former patient again suffered from colicky pains. The surgeon made a diagnosis of advanced pregnancy or rather incipient labor. Although that possibility was absolutely denied by the girls, the patient soon gave birth to a healthy boy, and later, after repeated questioning, confessed. The other sister felt nothing at all of the pain of the mother so closely united to her, and when the next day the temperature of the mother went up two degrees the temperature of the other twin remained normal, showing the absolute separation of the two organisms as regards function and metabolism.

Lactation in the Blazek United Twins.¹—Considerable scientific interest has been aroused over the phenomena of lactation in the united Bohemian twins, the Blazek sisters, one of whom was delivered recently of a boy at Prague (mentioned in the Vienna letter April 28). The father of the child is the manager of the two sisters, who has exhibited them to the public for several years. The Blazek twins form a pygopagus; that is, twins joined at the buttocks; all the organs of the trunk are duplicated, except that the rectum and the introitus vaginae are in common. Formerly the sisters menstruated for a four to five day period. During pregnancy the menses ceased in the pregnant woman, while the other sister menstruated regularly until the last two months before the birth. It is remarkable that lactation set in not only in the woman who was delivered but also in her sister. Dr. Basch, who examined the sisters in the Prague hospital, reports this fact and its explanation in the last number of the *Deutsche medizinische Wochenschrift*. (Trunecek and Baudouin also discuss the teratologic aspect of the case in the *Semaine Médicale*, May 18.) Basch regards the influence of the sympathetic nervous system on the secretion of milk as small. The role of the sympathetic is especially shown in the transmission of reflexes in sucking or milking which are necessary to a uniform continuous activity of the mammary glands. The essential spe-

¹J. Sickmann, M. D., *Deut. Zeitschr. f. Chir.*, Bd. 104.

²*Jour. A. M. A.*, May 14, 1910.

¹*Jour. A. M. A.*, July 2, 1910.

cific activity of the mammary glands is independent of the nervous system. According to Basch, the growth of the breasts is occasioned by stimulant substances which are present in the ovary after impregnation, while the initiation of the secretion of milk is brought about by stimulating substances which may be obtained from the expelled placenta. According to his opinion the secretion of milk in the non-pregnant twin is to be explained by the fact that we have to do with two individuals living in parabiosis in whom the necessary stimulus to the production of lactation generated by the pregnant sister was carried by the common blood stream to the other sister with positive effect. Whether this idea will be sustained by other investigators remains to be seen.

A Chinese Triumvirate.—According to the *Medical Record* the doctor, dentist, and barber are powerful factors in Chinese civilization. Once a week the Chinaman visits the barber for a general overhauling. First the head and face are shaved; then the ears are scraped and cleansed with a small brush made of duck's hair; third, the upper and lower eyelids are scraped with a dull edged knife, all granulations being smoothed away, after which a salt solution is applied with a duck's hair brush. It is for this latter reason that so much blindness is found in China. No antiseptic precautions whatever are taken; all instruments are held in the operator's hand when not used. Finally the patient's back is massaged; and after paying a fee of three cents (and no tip) he leaves the shop feeling clean outside. He next consults the physician. After undergoing the usual examination (a form of military inspection) the case is diagnosed and treated, unless a devil happens to jump down the patient's throat. For this the only remedy that will serve is the setting off of one hundred fire-crackers, and a daily visit to the joss house. This done he receives the usual pills for those vacated by the devil; these may consist of spotted rhinoceros horn—a wonderful cure for intestinal troubles; these horns come from southern China and in the Singapore market a single specimen will bring \$25. Tiger bones, ground and mixed

with Chinese wine make a valued blood tonic much used in northern China among all classes; the receipt is held by a Shanghai firm, which has become very wealthy upon it. Old deer horns are boiled down to make the medicinal glue which binds the fifty ingredients composing the average Chinese pills; in these one may get anything from a pint of gunpowder to cobra tail dust. Of equal medicinal efficiency are three high-grade tiger remedies—the eyeball, liver and blood. The genuine tiger eyeball can be prescribed only for the very wealthy Chinese; similarly the liver, dried and reduced to a powder, is worth its weight in gold; tiger blood, evaporated to a solid at a high temperature is believed by Asiatics to transform a craven into a hero. Finally the dentist is looked up; this professional will be found on any street corner in all large Chinese cities. He is very impressive by reason of his seriousness; always reading and thinking of his collection of some 2,000 teeth on a table, and a few bottles of some secret drugs said to contain the moisture of the inner side of an old coffin collected after a ten years' burial. The dentist in China is called a boxer; for he is supposed to have great strength in his arms and hands.

A Novel Cure for Obesity.¹ — It is obvious that there can be no real cure of obesity unless the habits of life, dietetic and otherwise, undergo a radical change. Now this is what obese persons, generally large eaters, specially resent and in the majority of instances they are unable, or at any rate unwilling, to suffer the pangs of unrequited hunger entailed by the necessary restrictions. Dr. Dubois-Havenith of Brussels relates the curious case of a young lady afflicted with polysarcia who "enjoyed her food" to such an extent that before she reached 25 years of age she weighed close upon 190 pounds. She found herself quite unable to forego the pleasures of the table, and as her digestion was slack she suffered a good deal of discomfort after dinner. On one occasion she experienced such physical distress that she provoked vomiting by putting her finger down her throat with im-

¹London Lancet, Aug. 6, 1910.

mense relief. She was delighted to find that it was possible to conjure the evil effects of over-indulgence in so simple a manner, and so it degenerated into a habit. To her surprise she found that under this regimen she rapidly lost flesh, so much so that in three months her weight had fallen to 120 pounds. She then called attention to the fact that whereas a moderate quantity of food used to leave her with an unsatisfied craving, after deliberate emesis she was free from hunger between meals. Physiologists may explain this on the assumption that the mere act of eating "decongests" the digestive apparatus and so confers functional peace. In any event, the Romans, who were past-masters in gastronomy, knew all about voluntary vomiting, as is shown by the institution of the *vomitorium*, which was resorted to presumably very much for the purpose described in Dr. Dubois-Havenith's case. Of course, it is irrational to take more food than one requires, but having done so the provocation of vomiting cannot be described as unphysiological. Nature provides that remedy automatically in suckling infants whose overloaded stomachs are relieved by a timely puke, and even in grown-up persons the reflex is not unfrequently called into play to avert the consequences of over-indulgence in food or drink. Whether, however, voluntary vomiting can safely be allowed in any individual to degenerate into a habit is a matter calling for careful consideration. *Æsthetically* objectionable and morally questionable, the method is also physiologically incorrect, and it is not likely to supplant more orthodox treatment which affords a disciplinary training of value.

The Death of Florence Nightingale.¹—

Florence Nightingale, the heroine of the Crimean War, died at her home in London on Saturday, August 13th, aged ninety years. Her long life was devoted to the cause of saving life and relieving suffering in times of war and pestilence and to the general improvement of hospital service at all times and everywhere. To her we owe the modern system of army field hos-

pitals. In accomplishing her great work which has resulted in revolutionizing field sanitation, Miss Nightingale had not only to contend with disease in the Crimean campaign, but her greatest fight was against the prejudice which existed against a woman engaging in work of that character. At the beginning of the Crimean War not a woman nurse was employed in the military hospitals. It was not until the war was over and the generals and medical men at the front enthusiastically praised her work that public sentiment was turned in her favor and she became a heroine whose fame has endured from 1855 down to the present time. A brief summary such as this cannot adequately present the work which she accomplished; but it has had the greatest possible influence on field hospitals and the treatment of the wounded in all wars that have occurred since that time. When she returned to England the British public raised a fund of \$250,000 and presented it to her as a token of the esteem in which they held her. This she accepted, but not for herself. She used it to establish a school for nurses at St. Thomas's Hospital, London. She superintended this school for many years, finally retiring from active work for a much needed rest. In 1907 she received from King Edward the Order of Merit, the statutes being modified to admit of her appointment, and she is supposed to be the only woman who has been so honored. In 1908 she was given the freedom of the city of London. Although her health was never robust after the Crimean War, yet she wrote much that was of value.

SURGICAL HINTS.

In young children caries of the mastoid process with abscess formation may occur without involvement of the inner ear, and without fever, pain or other constitutional symptoms.

Rectal feeding can usually be dispensed with after esophagotomy for foreign bodies, the patient being given small amounts of sterilized water for the first twenty-four hours, after which liquid food may be administered.

¹New York Med. Jour., Aug. 20, 1910.

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The Carnegie Foundation Report on the status of American medical schools has led to an endless amount of discussion *pro* and *con*, and in certain circles at least has stirred up an antagonism that is anything but passive. On the whole the Report presents few facts that was not generally known, and many of its criticisms and animadversions on the teaching facilities and methods of our average American medical college have been foreshadowed by numerous articles that have appeared from time to time in the medical press during the past decade. For a number of years the Association of American Medical Colleges has been earnestly striving to elevate the standards of medical education, and a record of its meetings would show very conclusively that those charged with the direction and management of the medical colleges of the country have been thoroughly alive to their shortcomings. It would be most unfair to state, or even to convey the impression that honest, faithful efforts have not been put forth to better existing conditions, or to deny that very real and substantial progress has been made in the equipment, methods—and aspirations—of practically every recognized medical school. The state boards of registration have worked consistently to these same ends, and have been particularly successful in raising entrance requirements, a fact well shown by the improved type of medical students.

It is quite apparent, therefore, that the general movement in medical education, including essentially all teaching facilities and methods, has been forward, while the substantial improvements that have been made in not one but many directions are such that graduates of even ten years' standing cannot fail to appreciate them.

If we were to assume to criticize the Carnegie Report from any standpoint whatsoever, it would be on the grounds that the very evident progress of the past ten to fifteen years is entirely disregarded, and comparatively little or no credit is accorded the medical schools for the efforts they are obviously making to increase their efficiency. Unfortunately nothing handicaps a report or a work of reform as surely as a suspicion of unfairness and we fear the laudable motives and the really excellent, painstaking work embodied in Professor Flexner's report will fail to accomplish the good it should—for a while at least. This situation, the result primarily of the controversies it will surely stimulate, together with the suspicion of an animus against the smaller institutions, bound to result from the apparent failure to give proper credit for the advancement practically every college has made, will pass away, it is to be hoped, when the Report is more carefully studied and understood.

Aside, however, from the foregoing, it will be seen that the Report is epoch mak-

ing, that it is fearless and specific in its recommendations, and should give very material aid in placing medical education on a higher plane.

A real service has been done for the deserving medical colleges of the United States, a service that will take on new significance as the forces at work for the advancement of medicine are better organized.

Medical education, like all other branches of learning, is largely dependent on the personal equation. In other words, if a person is intent on securing medical knowledge, the question of the institution is purely of secondary consideration. The truth of this is shown by the experiences of countless of America's foremost physicians and surgeons. How little important is deemed information as to the medical college from which a man graduated! It is the man himself and his individual ability that commands principal interest, and no one is ever handicapped—in the public estimation at any rate—by the fact that he graduated from one of the smaller or mediocre colleges. To show how little importance is attached by even the medical profession to the institution from which the diploma is obtained, one has only to inquire as to the college data of any of the country's great medical men, past or present. Unless the person receiving the inquiry has specially posted himself, it is the exception to obtain a single fact concerning a man's college training, however prominent he is or may have been. •

This should not be understood as minimizing the desirability of first class institutions, or the necessity for every college to seek to obtain the best possible equipment. In no way do we wish to intimate that we are not in sympathy with the elevation of the

standards of medical education to the highest degrees of efficiency. But what we do desire to emphasize is that the day of the small, comparatively inconsequential, medical college is by no means passed. Equipment and methods as long as the personal equation plays so vital a part, are necessarily of relative importance, and questions of locality, expense (cost of living), and expediency will continue for many a day to give the small medical college a legitimate place in the scheme of "things as they are."

The most important phase of medical education is that which pertains to entrance requirements. No one who will give the matter sufficient thought will deny that rigid entrance requirements mean a higher type of students. Better qualified students will exert a powerful influence on each institution, with inevitable tendencies toward greater efficiency. A college must respond to its students' needs, or it will very soon find its classrooms vacant. There can be no question, therefore, that establishing high entrance requirements promptly elevates every standard of a medical college, solving at once not one but many problems, and achieving true progress in a most practical and far-reaching manner. The poorly equipped candidate for a medical degree is eliminated automatically, and likewise the handicap he would assuredly place on the work of any institution he could enter.

The crux of the medical college situation is obviously the elevation of entrance requirements to the highest possible point compatible with common sense and sound judgment.

Experimental typhoid has been produced in animals by Prof. Metchnikoff and reported to the Paris Academy of Sciences,

Mar. 21, 1910. This is doubtless an epoch-making discovery, as the field is now open for the workers who are busy with the problems of serums and vaccines for prevention and cure—that is, if the antivivisectionists do not induce legislators to put a stop to such life saving investigations. Metchinkoff thought that prior failures to cause typhoid experimentally were due to the fact that pure cultures were used and he then tried successfully the administration of foods contaminated with weak dilutions of bacillus infected feces. Chimpanzees thus managed contracted characteristic typhoid. (*Jour. Am. Med. Ass'n*, Apr. 16, 1910). The interests of humanity demand a vigorous assault on the problems now apparently capable of solution.

Preventive vaccinations will apparently become matters of routine in all cases where close contact with carriers is unavoidable. In the matter of smallpox, we have a century of statistics showing the necessity of the operation for everyone but in the other diseases universal vaccinations are absurdly impractical. In the case of diphtheria, a prophylactic dose of serum is a matter of routine for the contacts, indeed it is reprehensible to neglect it, and the past mortality of nurses and doctors shows the wisdom of the present method of immunizing the attendants, but no one dreams of immunizing a whole city against a danger which faces only a few. In like manner, typhoid vaccinations are saving the lives of nurses and it is already a necessity to immunize all others brought into close contact with such patients, but the vaccination of a whole community will never be attempted except when there is a serious outbreak where the water and food supplies are not guarded.

Preventive vaccinations for cholera, bacillary dysentery and plague possess only an academic interest for northern physicians, but it may be taken for granted that no one would think of submitting to all these various doses in endemic territory. So we are safe in predicting that the medical profession will never advocate universal vaccination in those affections, even when it is learned how long each immunity lasts and whether one process does not interfere with another given soon afterwards. Indeed from the difficulty of popularizing smallpox vaccination, it is likely that the profession will vigorously oppose the present suggestions for similar measures in any other disease. The whole trend of prevention is in the direction of isolation of the sick, and reduction of the chances of infection. We must prevent the carriers from spreading bacilli, instead of attempting the impossible task of trying to become strong enough to resist every pathogenic organism.

The source of typhoid infection has been carefully worked out of late years by the Germans, who have been conducting a most painstaking crusade against the disease. (*Jour. Royal Army Med. Corps*, Jan., 1907). The most amazing and yet expected result is the discovery that in nearly all the cases in which the source could be found, it was a patient or chronic carrier, the latter causing about 10 per cent. The medium of transfer of the bacillus was the hands in over 90 per cent., the other media being generally the milk, less often other foods and very rarely the water or clothing. In about two-thirds of cases the source could not be traced, but it is presumed to have been an unknown carrier as a rule, or a mild unrecognized case. Never-

theless we have a wealth of instances showing that when a city water supply is improved, typhoid is phenomenally lessened, though we have also long known that the drinking water is very rarely the medium of transfer. Indeed sometimes an improvement of the water is not followed by a lessening of typhoid, and in such cases we may rest assured that personal contact with carriers is the main cause or that we have eaten foods infected by them.

The tremendous importance of these new facts is the proved necessity for isolating the typhoids, disinfecting their discharges, and immunizing the contacts—nurses, family, etc.

The problem of the chronic typhoid carrier has found no solution as yet. The unfortunates cannot be shut up—they are too numerous—and as they do not react to treatment, they might require life imprisonment. We must content ourselves with warning them, and then confining them if they neglect the precautions. The German crusade has already greatly reduced the number of cases and deaths, and we must follow the same lines instead of attempting universal vaccinations. The point is the necessity for far greater restrictions on the typhoid patient—the real distributor of the disease. He is more dangerous than a smallpox case and health authorities must keep close track of all carriers until a way is found to cure them. Luckily the German investigations show that the carrier who is careful, rarely if ever infects anyone else, so that we need not be unduly alarmed about them. Yet we must know who and where they are.

The long failure to recognize pellagra in America is not so amazing as the facts

would seem to warrant, for it is the rule in all newly arising diseases or epidemics, that the first cases are never recognized. To be sure, the psychiatrists had been puzzled to account for these curious cases of dementia in the asylums, and knew what pellagra was, but they did not connect the two together because very few people can see a thing until it is pointed out to them. When influenza visited us in 1890, the first cases were not recognized, but in a few weeks any tyro could make a diagnosis. When we are on the “look-out,” it is easy to detect cases, but when we do not know a disease is present, we never think of it, and it requires thinking of a very high order to detect it. It seems therefore that instead of condemning the psychiatrists, we should give the highest praise to them for the promptness with which they have taken up the matter, now that they have been aroused by their leader—Dr. J. W. Babcock of the South Carolina State Hospital for the Insane. His work has been epoch-making and deserving of far more than “the highest praise.”

Amebiasis in the insane is the first great discovery following upon the search for causes of pellagra. Siler and Nichols of the Army Medical Corps, report about half of the inmates of the Peoria Asylum have amoeba in their stools, and about 80 per cent. of the pellagrins. This does not show any relation between amebiasis and pellagra or any other mental affection, but it does show that amoeba may be causing far more disease in and out of asylums than we had any suspicion. Dysentery has always been more or less of a bane in the insane and a deplorable number are said to show post-mortem colonic ulceration, even when dysenteric symptoms were not spe-

cially severe or even very noticeable. More-over amoeba are now being found in water supplies. There is something about hot weather or hot climates which causes an amoebic infection to become severe, and it has long been known that these sufferers improve in cold weather or cold climates. For these reasons it is not at all unlikely that we have been overlooking very dangerous amoebic infections, even though our attention has been directed to them for twenty years. There is a chance that we are now on the trail of another hidden enemy, which has long been preparing the ground for later troubles. Cantlie of London has suggested that many cases of stricture or malignant disease of the sigmoid or colon may have a remote origin in the cicatrized lesions of amoebic dysentery as that disease is often localized in these organs or the end of the descending colon. Perhaps we have a clue to the origin of such cases in America; at least we know that amoebic infection is far more common than we once thought. Now that we know it is here, everyone should be on the lookout for it. A short dysentery is far more serious than we once believed.

The arterial relaxation of hot weather is a matter for serious consideration in connection with amoebic dysentery, pellagra and many other conditions which are more serious in the south of Europe and America than in the north. The excessive heat or light or both seem to cause an increased blood supply to all the epithelial structures, with a consequent increased activity. The skin glands become over active and cause all kinds of disturbances. Almost every resident in the tropics, for instance, suffers from excessive production of cerumen in the

ears. The gastro-intestinal tract suffers, and a latent colitis lights up almost as soon as the hot weather begins or the sufferer enters the tropics. Disturbances of digestion are almost universal. The respiratory tract also suffers, so that pneumonias and forms of bronchitis are common, severe and difficult to cure. The diarrhoea and skin lesions of pellagra are therefore of the same order of phenomena, no matter what the exciting cause may be. The climatic element is now under investigation, particularly the effects of light with a view of determining why the poison or infecting agent should be so much more active in the south. Perhaps corn may be more easily spoiled, but it is said that the short northern season induces farmers to cut the corn too soon, and it is not properly dried, whereas the southern corn is the best. If climate is a factor, it may be because of its effect on the patient, causing arterial relaxation and laying the foundation for a subsequent infection which would be harmless further north. In every way we look at these new problems brought up by pellagra, they seem destined to have a profound influence upon our conception of other diseases and their relations to climate and season, and the special types of people affected.

The irresponsibility of suicides seems to be recognized more and more. The act may have been perfectly normal in former ages and lower civilizations when life was so cheap that its preservation was not guaranteed, when it was occasionally necessary to destroy men, and when conditions of living were so bad that death was often preferable. But in modern times society practically guarantees life and tries to make it worth while, so that self-destruction

generally, if not always, means abnormal mentality. Some years ago, investigations showed that more than half of the cases were profoundly neurasthenic, or perhaps we might use the more fashionable term, psychasthenic. At any rate they were suffering acutely from the thousand and one distresses of long existing exhaustion, and judgment became so warped they concluded it were better to end the life than mend it. Little attempt was made to find the causes of the exhaustion, beyond the usual "too much work and too little play." It has been proved over and over again that many of these cases can be prevented, some indeed need only a little strengthening of will-power or a slightly increased incentive to live. Suicides among the insured are markedly decreased by making the policy void under such circumstances and it is a strong incentive to protect the family from dire want, though curiously enough the suicide never realizes that he is removing their real means of existence.

The pathology of suicide is therefore of extreme importance and is fortunately receiving more and more attention though not as much as it deserves. Julius Bartel has been looking into the matter in Germany (*Wiener Klinische Wochenschrift*) and finds quite a high percentage of tuberculosis as the cause of this mental disturbance. The thymus gland was enlarged in many and this fact raises the suspicion that defective or arrested development may be at the basis of many cases—perhaps they are people easily broken by causes which the normal resist. It has long been suspected that every suicide is congenitally abnormal in some marked degree, even if he is much above the average in intelligence. It is quite likely therefore that post-

mortems will show that every case is really an invalid who should have been under medical care. This does not mean that life insurance companies should remove the clause voiding policies for suicide within the first few years of insurance for that is a beneficent deterrent, but it does mean that it is one more of the forms of death we must try to prevent. It also means that the law declaring attempted suicide a misdemeanor must be revoked as a survival of barbarism similar to the old laws which considered the insane to be criminals. Those who attempt suicide should be confined in a hospital and given gentle care and medical treatment. They are all cases for the doctor to cure, and not for the courts and police to punish. The medical man must take over this burden, as well as the burden of the inebriate.

The increase of suicides has been repeatedly denied but the latest statistics published by Mr. E. B. Phelps (*Amer. Underwriter*, Dec., 1909) and those of Mr. Frederick Hoffman leave no doubt that there has been a steady increase everywhere for many years but particularly in the larger cities. This seems to show that the causes of the underlying pathological conditions are becoming more effective. It is therefore high time to know more about both the causes and the diseases, for surely these cases come within the sphere of preventive medicine. Each case must receive the most painstaking investigation and the results published. Perhaps life is getting too strenuous—that is, to keep it requires a greater effort than the body is able to exert, and the feeblest are giving up. Of course, this natural selection will eventually cause the race to become better adjusted to the conditions. Those fit for the life will sur-

vive, but we don't like to see the sacrifice of the others. Perhaps we can adjust the conditions to the men instead of allowing Nature to adjust man to the conditions in her brutal way of killing off the unadjusted types.

To shave or not to shave is the newest hygienic puzzle suggested by the alleged discovery that the bearded man suffers from colds more than the smooth faced—and it is all blamed on the bacteria which flourish luxuriantly on all hairs. Before advising men to shave, we would like to be convinced that it really has a beneficial result. Of course we acknowledge that he who allows his tangled beard to become a receptacle for the crumbs of years is carrying around garbage which can serve as a culture medium for almost anything, but not in the case of men who are as clean as Nature presumed them to be. We would like to suggest that someone find out why beards were evolved at all if not for some beneficial purpose which women did not need. It is often said that sexual selection accounted for the matter, a beard in some way being more attractive to primitive women, and the possessors of bunches of hair had increased chances of securing mates, and that the beard may have had no other use or may even have been as burdensome as the enormous feathers of birds of paradise. Nevertheless mating generally takes place before the beard makes its appearance and we must look elsewhere for the physiological reasons for its evolution.

The purpose of the beard has some relation to a benefit in fighting and hunting which were about the only things man did at the time his face became differentiated from woman's. Whatever the benefit,

woman in her more protected environment did not need it or was even harmed by a beard, and it is safe to say that modern men who do not hunt or fight and who are housed something like women, are as well off without beards or even better off. This much seems to be safe reasoning until we can find why Nature surrounded our mouths with bunches of hair to become smeared with everything we eat. For outdoor workers we would like to reserve judgment until the physiologists tell us why beards were evolved. This should not be a severe task for the cause must have been potent to have made such a vast difference between the sexes. It is generally assumed that beards are still protective in some way and we would not like to accuse Nature of foolishness until we have the proofs, for we have never yet found her a fool.

The right to dispense his own remedies is one of the most fundamental of the physician's calling. Limit or modify this right in the slightest degree and his whole usefulness as a practitioner of medicine is entirely destroyed. The more one considers the amazing suggestion that medical men should be prevented by law from dispensing whatever their judgment dictates, the more indignant one becomes. It apparently emanates from the erstwhile management of the National Association of Retail Druggists. From an intimate acquaintance with a goodly number of American pharmacists and a fairly accurate knowledge of their aims, ambitions and activities, we cannot believe for a minute that druggists generally are in sympathy with any proposition to interfere with dispensing by physicians, or that they will lend their influence to promote the enactment of any legislation making any

restrictions in such a direction. The idea would be unworthy of attention because of its ridiculous character, but for the fact that just at present there is a class of medico-phobiacs, or anti-medical cranks who will grasp at anything and make it an issue, provided only it be *against* the medical profession.

In the present instance, a few men are probably responsible for this insult to the physicians of America, and until the attitude of the above association as a whole is learned from the action that will be taken at its Pittsburg meeting, the pharmacal profession should be held blameless. Unless we are much mistaken the matter will be quickly disposed of and the association forced by its intelligent members to take a position of dignity and common sense similar to that of the strong American Pharmaceutical Association, as embodied in the following clear cut resolutions passed at the last meeting:

RESOLVED, That we recommend that any movement for the reform of medical practice be allowed to originate and proceed within the medical profession.

FURTHER, That we are opposed to any attempt on the part of the pharmacal press to dictate or compel any such reform, believing as we do that the medical profession is qualified to institute and carry out its own necessary reforms.

The American Pharmaceutical Association is made up of many of the same pharmacists who compose the N. A. R. D., gentlemen of refinement, scientific attainments and broad, far-seeing intelligence. This Association has been a powerful factor in the splendid advance that pharmacy has made during the past quarter century. It has been closely allied with every upward movement in medicine and pharmacy, and not a few of the tangible advances in the fields of chemistry, therapeutics and pharmaceutical science can be traced to the

work of the Association and its members, and the impetus it has given in many ways to scientific investigation.

While the objects and activities of the N. A. R. D. are obviously somewhat different from those of the American Pharmaceutical Association, and we have no desire to depreciate the laudable aims and praiseworthy work of the first named organization in any way, shape or fashion, we still believe that without the slightest impertinence we can earnestly commend the resolutions of the American Pharmaceutical Association as offering valuable food for thought for the members of the N. A. R. D., ere they place their Association on record on the subject of medical dispensing, or any other of the problems belonging to the medical profession.

The question of drug dispensing by the medical practitioner is one that can properly concern nobody but the individual physician and his patients. With the individual physician the question: (1) whether he will supply no medicines whatsoever; or (2) a part, such as tablets and the medication he wishes to give immediately, writing prescriptions to be filled by the pharmacist for the balance and more important part of the treatment; or (3) whether he will furnish everything and ignore the druggist entirely, can only be decided by each physician according to the exigencies of his practice, such as location, nearness to or distance from well-equipped and trustworthy drug stores, the custom of the community, his personal needs, etc., or his inclination and belief.

We doubt very much if the most rabid opponent of medical dispensing will deny its necessity for the physician in the small country town far away from even the poor-

est drug stores. Here the needs of the patient decide the matter and the physician would be delinquent if he did not dispense everything he makes a practice of using. Likewise in a community where all of the physicians dispense and always have, patients expect their doctor to furnish the medicines, and he is either obliged to do so or suffer the consequences.

In the larger community where there are plenty of well-equipped and trustworthy drug stores, the question becomes one for each physician to decide solely on his inclination or belief. We insist, if a doctor wants to dispense his remedies exclusively, it is his right. It may qualify his professional position, cheapen his services, and in some communities seriously jeopardize his standing, for he may be classed with the quack vendor of medicines. Under such conditions, the inclination of few physicians would lead them to dispense their own remedies exclusively. Indeed, it is always good judgment to adjust one's methods to the local requirements, even to the extent of writing a prescription for a single tablet, granule or pill, if to dispense the same tends to cheapen the service or lower the physician in the estimation of the patient.

There is a factor in the situation that has grown in importance as pharmacy has extended and that is the difficulty of obtaining pure drugs or drugs of dependable and uniform strength. Many a physician, therefore, has been driven to dispensing by the discovery that his prescriptions were being substituted or compounded with inferior drugs by inferior, ignorant and unscrupulous clerks. In such cases, dispensing of a more or less complete line has been a matter not only of self-protection, but of real duty to one's patients; and while the extra work entailed has been distasteful and much of it

actually humiliating, more than one physician has been exceedingly gratified to note how rapidly his knowledge of therapeutics has extended and how materially his armamentarium has increased.

Fortunately, pharmacologic efficiency and drug store integrity have been extending and most pharmacists have recognized the advantages of making the most of an unswerving honesty. Today it is the exception to fail to find one or more thoroughly reliable and well-equipped drug stores in any town or city of one to three thousand inhabitants. It is usually a good policy for each and every physician to arrange with the local drug stores to carry the remedies he intends to prescribe regularly. Then with the tactful dispensing of such tablets, pills, granules and other drugs as he wishes to administer himself under his own immediate supervision and control, the average physician will be able to maintain his professional standing free from every criticism, he will be able to meet every need of his patient from his own and his druggist's equipment, his knowledge of drugs and their physiologic actions will increase, his prescription writing will wonderfully improve, and last, but by no means least, he will establish relations with his druggists, that cannot fail to prove of the most far reaching benefit.

The clean, honest, capable pharmacist and the clean, progressive, upright physician have need of each other and the service that each can render to each other. Their interests surely need never to conflict and working conscientiously they will never trespass on each other's legitimate field of activity. It will require no law to keep physicians from dispensing when they can feel sure of their druggists' cooperation, nor

will it require a law to prevent druggists from counter-prescribing and dispensing when they know they are receiving the patronage of honorable physicians. The whole proposition of how to correct and overcome the evils—medical dispensing and counter-prescribing—that have so long interfered with closer and more practical relations between the medical and pharmaceutical professions, resolves itself into a problem, the solution of which is the cultivation of mutual confidence, respect and esteem, with the development of an efficiency each in his own field which shall command the fullest respect of each for the other—the druggist for the doctor's therapeutic knowledge and ability to prescribe—the doctor for the druggist's chemical and pharmacologic knowledge and ability to compound a prescription with skill, accuracy and—most important of all—conscience.

The white slave investigation has brought one astounding fact to light—France is the leading source of supply for our imported prostitutes. There is much food for thought in this—for all those who have had so much to say about the diminishing French birth-rate. Why are these women forced out of France? Is it because too many are born and they cannot be supported or find honest work themselves? France is one of the richest countries in the world and constantly growing richer from dividends of world wide investments. She could easily feed these outcasts by importing food, but who will pay the bill? It won't do to increase taxes and feed the unemployed at public expense, because taxes come indirectly from the poor to a large extent, in spite of all efforts to make the rich shoulder the burdens. It does seem that the French really have a surplus popu-

lation which is allowed to sacrifice itself, in order that the balance may have more wealth per capita. We thus come to the curious conclusion that any increase in the birth-rate will only supply more surplus for sacrifice. It would be a blessing if the birth-rate were so small that none were forced into prostitution. The diminishing birth-rate then is not the curse which so many imagine it to be.

The sterilization of milk by ultra-violet rays is reported to be practicable and if true, there is doubtless a decided advance in this vital matter. The changes caused by heat of sufficient degree to kill pathogenic organs are quite generally considered to interfere with digestibility of the milk, so that there is a widespread desire to secure uninfected milk which can be administered raw, but as such perfection is still far off, some kind of sterilization seems desirable wherever there is doubt. It is not likely that ultra-violet light will injure the milk but the possibility must be kept in mind, lest we prematurely conclude that the problem of perfect sterilization has been solved. The enormous expense of treating a city's milk supply this way, rules out the method for universal use; indeed the expense of any method is found prohibitive. Experience also seems to show that a certain amount of money and labor expended on improving dairies and methods of distribution, does far more good in saving life and health than if spent on sterilization or pasteurization. So the new method even if found perfect has a very limited sphere. Our duty is clear—we must continue the crusade for clean milk, and that means clean cows, clean farms, clean handlers, clean receptacles and the milk kept cold until delivered at our doors.

ORIGINAL ARTICLES.

OBSERVATIONS ON THE TREATMENT OF FLAT FOOT.¹

BY

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For convenience of consideration we divide this deformity into weak feet and rigid feet.

Weak feet, due to hereditary influences, injury, illness or occupation, we frequently see in children as well as in adults.

Rigid feet represent a class of cases which may deviate but a degree in the progress of the condition or originate from disease or injury direct.

The deformity or disability is a matter of degree to which the condition has advanced, due to whatever cause it may be referable. The variation and adaptability of treatment to the requirements of the varying degrees of indications contain the key to success or failure in treatment.

Pathology—The chief cause of the condition of weak or flat foot is the sluing inward of the astragalus on its perpendicular axis, the tilting inward of the os-calcis on its horizontal axis, changing the plane of weight bearing from that considered normal as passing through the three points, namely centre of patella, centre of ankle joint and second toe. The increasing malposition of the foot tends to increase the internal rotation of this perpendicular plane upon its axis, increasing more and more the strain directly placed upon the longitudinal arch, causing the head of the astragalus to become

more prominent, pronation more marked, abduction of the foot anterior to the medio-tarsal joint and increasing protective contraction of the abductor muscles.

Etiology may be congenital defects in the contour of the bones, or faulty development of ligaments and muscle supports, or acquired defects which include those cases produced from wrongly constructed shoes, or from occupation requiring the feet to support unduly heavy weights or when the individual stands long hours and upon hard surfaces, as well as cases seen in convalescence from severe illnesses or suffering from debilitating conditions, also cases resulting from injury. To any one or to a combination of the above factors the given deformity or disability can usually be readily traceable.

Symptomatology is comparatively easy, demonstrated by range of movements, as compared to the normal arcs, deformity demonstrated by the attitude in standing and walking and pain which may or may not appear proportionate to the stage of the given case. A very painful foot may appear comparatively normal in contour and have slight variations from the apparently normal arcs of motion but as the normal arcs are not absolutely constant experience has to be our guide in judging. Again, an extremely flat foot may not have the slightest pain, so that the symptom pain is usually an accompanying indication of progressing deformity and disability but which is the chief cause of bringing the case to the attention of the orthopedist. Practically the only other symptom to attract marked attention is the deformity which is variable from the slightest to the most marked pronation, flattening and eversion of the foot.

These foregoing conditions are very clear indications of static error even to the patient himself but it seems to me we should point-

¹Read before the Orthopedic Section of the New York Academy of Medicine, March, 1910.

edly emphasize the least evident indication in the otherwise apparently normal foot, viz. the limitation in the arcs of motion, passive or active, particularly that of dorsiflexion due to a shortened calf. See illustration No. 1.

Tubby in his article published in the *British Journal of Children's Diseases*, London, 1907, emphasizes this point, and states the normal dorsiflexion from his findings to be 72 degrees, 18 degrees less than a right angle. He advises the restoration of the normal arc by an open operation on

feet than town dwellers and it would seem that reducing the height of heels would lessen the tendency to shortened calf, hence the tendency to flat feet, although our hereditary addiction to shoe wearing has undoubtedly left its imprint, and the present ready made shoe certainly leaves much to be desired. These conditions of shortened calf, whether congenital or acquired, would seem in a very large number of cases to be a chief exciting cause of flat foot.

The foot acting as a lever in walking, the resistance of a shortened calf brings too



No. 1.

Illustrating case suitable for tendon lengthening where foot is painful and dorsiflexion is but to a right angle, with beginning pronation. Case illustrating short calf.

the tendo Achilles and division by the Z shaped incision, suturing the divided ends to the proper length.

Dr. Wherry of Cambridge mentions the comparative increase in the angle of dorsiflexion in hill climbers to town dwellers as 10 to 15 degrees greater.

In this connection the influence of heels may be mentioned as contributing directly to the shortening of the calf muscles. Hill climbers undoubtedly suffer less from flat

great strain upon the supporting structures of the longitudinal arch which in order to compensate for the existing shortening gradually yield and present the symptoms already mentioned, namely pain, relaxation, pronation, abduction and spasm. Before this takes place there may be produced the condition known as Morton's toe, which is traceable in a great many instances to a shortened calf.



No. 2a



No. 2b.

Nos. 1 and 2. Before operation.



No. 2c.

No. 3. After operation.

A. E. Girl 12 years old. Infantile Paralysis with pronated foot. Treated at the New Jersey Orthopedic Hospital and Dispensary. Arthrodesis of Astragalo-Scaphoid Articulation.

Treatment. By lengthening the tendo Achilles we relieve the entire situation in these cases. Stretching by the various means such as the Shaffer stretching apparatus will in many instances of a slightly shortened calf relieve symptoms but the condition is very liable to relapse.

Instead of dividing the tendon structure completely by any one of the various methods advanced, and suturing, I much prefer the method employed at the New York Orthopedic Dispensary and Hospital advanced by Dr. Hibbs, where the tendon is sufficiently lengthened but still contains a strip of tendon structure in continuity throughout as a nucleus in its repair. I have used this method extensively both at the New York and the New Jersey Orthopedic Hospitals as well as in private work and have yet to be disappointed in its application to these selected cases.

Another method which appeals to me as of value in certain cases of relaxed foot, or congenitally weak foot, or the pronated foot as a result of injury or paralysis in cases above eight years of age, is arthrodesis at one or more joints. I have not attempted the operation at the calcaneo-astragaloid joint for pronated flat foot but I have in several instances ankylosed the astragalus and scaphoid with very satisfactory results.

The photographs of two of my patients I have to show, one a girl, A. E., 12 years old, treated at the New Jersey Orthopedic Hospital, being a case of infantile paralysis with loss of anterior and posterior tibial power, with partial loss of gastrocnemius and common extensors of the foot. The astragalus was in firm position in its relation with the tibia. By removing the articulating surfaces between astragalus and scaphoid, adducting the foot so as to bring the flat cut surfaces of the bones

together a very satisfactory result was obtained as demonstrated by the third photograph.

NO. 2—2ND CASE, THREE PHOTOS.

The second case of which I have photographs is a boy 15 years old treated by me at the New York Orthopedic Hospital, who presented moderately painful pronated feet, head of astragalus of left foot markedly prominent. After thoroughly stretching the left foot to overcome all resistance I performed an arthrodesis at the astragaloscaphoid articulation in July, 1907. These photographs were taken in October, 1908, when there appeared to be firm bony union and a much better foot than its fellow. I have since heard from him that the foot remains in the same good position and gives him no further concern.

NO. 3—3RD CASE, TWO PHOTOS.

Although I have no photograph to exhibit I wish to make mention of a third case, a boy 16 years old treated by me at the New Jersey Orthopedic Hospital, who presented a marked rigid, painful and pronated foot. After thorough stretching under ether and walking with foot well over-corrected in plaster of Paris followed by a plate worn in his shoe the foot relapsed and upon my advice he consented to the operation of arthrodesis which I performed ten weeks ago. (From the history I learned that the foot had some years previous received a severe wrenching from being caught in a wheel. In this instance the scaphoid was very prominent). I saw the boy this week and found the position excellent and union apparently secure but of course it is too early to form an opinion of the ultimate result.

Then there are those cases seen in our busy clinics who do not bear the usual methods of treatment well, cases which

present painfully rigid and pronated feet, who are compelled to earn the living for the family, also cases which present relaxed splay feet where tone to the supporting structures is lacking. They can not be taken from their work to undergo stretching and plaster of Paris treatment or the manual stretching and adhesive strapping, and where a plate is not sufficient. These cases have suggested to me the adoption of

The pull can be easily adjusted by the strap and buckle attachment at the calf band. I have used this appliance since 1908, both with and without the use of plates in conjunction. These photographs are of a woman 48 years old who presented very

No. 4—SLING SUPPORT, THREE PHOTOS.

painful rigid flat feet. She was urged to have the usual method of stretching under



No. 3a.



No. 3b.

H. E. Boy 15 years old. Case of pronated and moderately rigid flat foot treated at the New York Orthopedic Dispensary and Hospital, July, 1907, by manual stretching and arthrodesis of the astragalo-scapoid articulation followed by steel plate arch support for six months.

such an appliance as you see here, composed of a sling with or without elastic webbing included, to be adjusted about the ankle and instep in such manner that when the end is attached to the metal upright, (which is secured to the shoe below and the calf above) furnishes a more or less rigid support to the arch when walking and standing. This sling support can be used in the treatment of club foot by changing the pull from the inner ankle to the outer ankle.

ether and application of plaster of Paris casts fixing the feet in over-correction, but stated it was out of the question as she could not take the time from her work as she was the sole support of the family. I applied this method of treatment, which has permitted her to continue in her employment. The pain diminished from the start and at the present time she is entirely free from pain, spasm of the abductors of the foot is absent, and although her feet are not en-



No. 4a.



No 4b.



No. 4c.

F. N. Woman age 48. Case of rigid pronated flat foot treated in the Dispensary of the New York Orthopedic Hospital by cloth slingarch support.



No. 5a.
1. Before.



No. 5b.
2. During treatment.



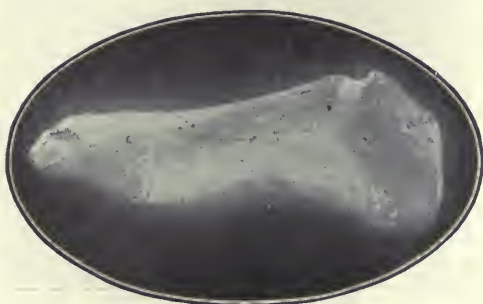
No. 5c.
3. After.

N. S. Boy 15 years old. Case of rigid pronated foot treated at the New Jersey Orthopedic Hospital and Dispensary by manual stretching under ether and application of plaster of Paris walking dressing. Fixing foot in over-correction followed by plate support and exercises.

tirely corrected, yet it seems to me that I am justified in applying this treatment to this extreme case under the circumstances, considering that at the same time at her age the chances were not particularly favorable for a better result under any other procedure.

No. 5—THREE PHOTOS OF CASE TREATED BY STRETCHINGS AND PLATE, N. J. O. H. & D.

chased and attempted to be worn with little or no relief, and which even tended to increase the disability in not a few instances. This leads on to the question of what a proper form of plate when required should be. This should be determined by the surgeon who applies the support to the case in hand. The form employed to advantage by one is not always found serviceable by



No. 6a.

No. 1. Outlines the amount of inner surface of the foot to rest in the plate.



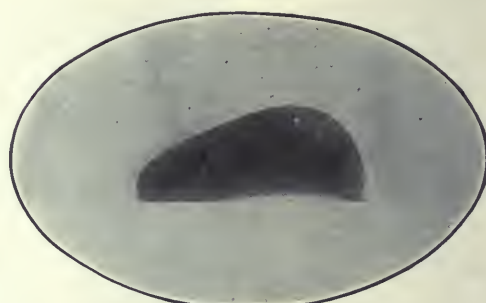
No. 6b.

No. 2. Outlines the area of the plantar surface of the foot to rest in the plate.



No. 6c.

Nos. 3 and 4 are photographs of the plate made to fit the pattern of the remodelled cast illustrated in cuts 1 and 2 before the leather covering is applied.



No. 6d.

The use of rigid supports such as plates has become very much abused not only by the laity but by lay physicians, due to lack of appreciation, I believe, of the demands of the individual case. With the great variety of shapes, sizes and conditions of feet it can be readily understood that a universal pattern can not be adopted which furnishes the reason for our meeting with so many cases where ready made plates were pur-

another. One can only determine by his own development of technique that form of plate which he can best adapt to the case to be treated. The form represented in a No. 6—FOUR PHOTOS OF PLATE AND MODELED CAST.

general way by these photographs, altered to conform to the demands of any particular case, has in my experience been found most serviceable. The steps in the process of

making the plate may be briefly outlined as follows:

The model of the foot is taken in plaster of Paris with the patient seated and the foot at rest in the painful of the soft mixture of plaster of Paris and water. When the imprint of the sole and the inner surface of the foot is sufficiently set the foot is removed and the mold allowed to dry when it is shellaced and filled to form the working model upon which the outline of the desired plate is drawn to cover the sole and inner surface sufficiently to grasp the arch. The model should be reshaped as the case requires, making the summit of the dome of the arch to correspond to the astragalo-scaphoid articulation, which should correspond to the junction of middle and posterior third of the entire length of the plate. From this point the slope should be most decided backward to the middle of the dome of the heel and much more gradually forward and outward, reaching forward to just posterior to the first metatarso-phalangeal articulation, and in width of sole to cover in ordinary cases about three-fourths of the entire width of the sole of the model. In simply pronated feet it is not necessary to cover more than one-half to two-thirds in width of the plantar surface, thus permitting the outer segment of the foot to go unsupported by the plate. The inner surface of the foot in most cases should be covered sufficiently to bring the upper border of the plate above bony prominences and indentations may be made in this surface to relieve somewhat the pressure of these bony protuberances.

The plate when made to conform to the outline thus drawn upon the model should when resting upon a flat surface indicate the position the arch will be held in when placed in the shoe. There should be three

points of contact with the surface, either two points forward and one at the heel or two points at the heel and one forward, forming in this way a tripod so to speak, in order to maintain perfect stability. Any rocking will tend to continue protective muscle spasm and delay restoration of the foot but where this observation is followed confidence will be placed in the stability with which the arch is held supported and the result attained.

Where the transverse arch is flattened and painful the forepart of the plate sole can be elevated just posterior to the painful metatarso-phalangeal articulation and will necessitate extending the sole forward further than is usual when fashioning the same to support the longitudinal arch only.

These plates can be made of various substances, preferably of steel sufficiently soft to be malleable and at the same time to preserve the shape when formed. The gauge will depend upon the strain placed upon them. I find 22 to 19 is about the range, 19 being the most employed. Twenty-two yields a very light and easy plate. These plates may be nicked, tinned, galvanized or japanned and covered with leather, the leather sole extended to form an insole to the shoe, thus keeping the foot from bearing against the hard metal, which is an objection often mentioned.

When placed in the shoe and the foot inserted there should be very little reliance upon the shoe to maintain the foot in position in the plate. If otherwise the plate has been improperly modelled or the case is not one suitable for plate treatment.

Foot exercise and massage with the corrective shoe will in the majority of early cases suffice.

In conclusion therefore I would emphasize that each foot is a law unto itself and to

get the best results we must individualize our treatment.

Care should be taken in our diagnosis as it has been known that a case of tubercular tarsal disease has been mistaken for a so-called flat foot.

In treatment we must consider that we have a question of mechanics to deal with

are not satisfactory we resort to such measures as arthrodesis and tendon lengthening, manual stretching under ether with plaster of Paris fixing dressings in over correction, etc.

In many cases the use of the cloth sling arch support will be found to be most serviceable for while it exerts a corrective force



No. 7.

Illustrating case in which there is marked laxity of all supports of the feet. A suitable case for treatment by exercise massage and flat foot sling supports.

but in the application of our mechanical treatment we must bear in mind its practical adaptability.

In infancy and early childhood our efforts should tend toward toning up the weakened structures by exercises and massage rather than by the use of passive supports.

No. 7—ONE PHOTO ILLUSTRATING SUCH A CASE.

In older cases while we have the attainment of a permanent cure always in view and where passive supports such as plates

it does not furnish a rigid passive support but allows freedom in the restoration of the supporting structures.

122 East 34th St., New York, and 234 Main St., Orange, N. J.

SURGICAL HINTS.

Next to rheumatism, tuberculosis is the most common of all affections of the joints, although in the early stage the symptoms may be so obscure as to make a diagnosis extremely difficult.

THE RELATION OF NASAL DISEASE TO HAY FEVER AND ASTHMA.

BY

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By hay fever we intend to include all the various terms which have been applied to a well conceived group of symptoms caused by the irritation of the afferent nerve terminals supplying the nasal mucous membrane, resulting in the stimulation of the nerve center in the floor of the fourth ventricle, and ending in an efferent nerve pulse at the point of origin in the nasal mucous membrane. This briefly is a description of a nasal nerve reflex, beginning in the nasal cavities and ending in the nasal cavities.

In connection with the subject of this paper we intend to consider only asthma of nasal origin. We have here a group of symptoms of a very definite character originating in an irritation of the nasal afferent nerve terminals and ending in the bronchial efferent nerve terminals.

In hay fever we have an afferent sensory impulse and an efferent sensory and vaso-motor impulse, while in asthma, we have an afferent sensory nerve impulse and an afferent motor and vaso-motor impulse. While in hay fever we can very readily conceive and are willing to accept at once the simple nerve impulse just described; in asthma, on the other hand, we have a more complicated nerve reflex to explain. In both reflex examples the peripheral irritation may originate in and be conveyed to the nerve centers along the nerve of special sense—the olfactory—or along the

sensory nerves supplied by the trigeminus. That we must have some connection between the sensory nerve supply of the nasal fossae and the motor and vaso-motor supply of the bronchi in order to satisfactorily account for asthma of nasal origin is only too evident.

In asthma we have the same origin of irritation in the nasal sensory afferent nerve terminals, but the efferent motor and vaso-motor impulses instead of returning to the seat of their origin, return by the efferent motor filaments of the vagus and the vaso-motor efferents of the sympathetic. This connection has been well established and is regularly described in the text books of anatomy, as through the superior cervical ganglion of the sympathetic. In order to understand how close is the nerve connection along the lines above indicated it may be well to briefly describe the nervous system involved in the parts under consideration.

The olfactory or special sense nerve has an intimate connection through the sympathetic system with the gasserian ganglion of the 5th nerve. The second or optic nerve is connected with Meckel's ganglion. The 3rd or motor oculi, and the 4th or trochlear nerve both receive filaments from the cavernous plexus of the sympathetic and from the ophthalmic division of the 5th nerve. The 5th or trifacial or trigeminus, the great sensory nerve of the head and face, and the motor nerve of the muscles of mastication, has its origin or nucleus in the floor of the fourth ventricle and so has the vagus or 10th cranial nerve. It is believed that the nuclei of these two nerves are connected by means of association fibres. This, however, is not essential in order to prove the connection between the

5th and 10th nerves as we have as previously mentioned, a well proven and accepted connection through the superior cervical ganglion of the sympathetic. The gasserian ganglion of the 5th receives branches from the carotid plexus of the sympathetic. The ophthalmic or 1st division of the 5th is a sensory nerve supplying the eye ball, lachrymal gland, mucous lining of the eye, nasal fossae, the integument of the eyebrow, forehead and nose. The ophthalmic is joined by filaments from the cavernous plexus of the sympathetic, and the 3rd, 4th and 6th nerves as well. Connected with the three divisions of the 5th are four small ganglia. With the 1st division, the ophthalmic ganglion; with the 2nd division, the sphenopalatine or Meckel's ganglion; with the 3rd division, the otic and submaxillary ganglion. All four receive sensory filaments from the 5th and sympathetic filaments from various sources. The sphenopalatine is the largest of the four and like other ganglia of the 5th has motor, sensory, and sympathetic roots. The nerve supply, motor sensory and sympathetic of the eye, orbit, nasal fossae, palate, pharynx and bronchi is entirely received from the foregoing sources. That they are intimately connected is sufficiently established by the facts just enumerated and need no further elaboration.

Now that we have established the undoubted anatomical and physiological connection between the eye, nasal fossae and bronchi, we can turn our attention to the consideration of hay fever and asthma of nasal origin as pathological entities. The etiology, pathology, symptoms, course and treatment do not warrant separate consideration of these two conditions and they will be considered together while at the

same time recognizing that either may exist with or without the other.

That hay fever and asthma are examples of what we are accustomed to term reflex neurosis there can be no doubt. Volumes have been written and numberless theories have been propounded to account for the etiology of these conditions. After carefully perusing them all we are forced to the acceptance of the term "reflex neurosis" as descriptive of the underlying etiological factors. That this term is not sufficiently specific and descriptive is due to the fact that the proper interpretation of what is meant by a reflex neurosis varies so widely. By reflex neurosis I merely mean the pathological reflex described in the first part of this paper. It is a true nerve reflex and there is no need of the mystifying terms so constantly applied to the phenomena.

In hay fever we have a simple nerve reflex, while in asthma we have a complex reflex. Examples of both in other parts of the body are too numerous to require mention. We can well afford to accept an anatomical and physiological basis only too well established and to build up our etiology, pathology and treatment along these familiar lines.

The foregoing introduction will serve to elucidate whatever points in this paper may be at variance with the ideas prevalent in the minds of many of the profession, a very considerable number of whom have given the subject careful study.

The first mention in literature of hay fever was that of John Bostock, a London physician, who in 1819, read a description of his own case before the Royal Surgical Society. In 1828, he supplemented his first report by reading a treatise on the subject based on 28 new cases. Others

soon followed; McCulloch of London, in 1828, Gordon of Edinburgh in 1829, Elliotson, of London in 1831, all agreed with Bostock in his description of the condition, but differed with him and with each other in their etiological theories. From Bostock's first report up to 1882 there was a great confusion of terms and endless dissension as to the etiology and pathogenesis of hay fever.

In 1869, Helmholtz advanced the theory that it was an acute infectious disease due to the presence in the nose of vibrios. In 1868 Guenean de Mussy propounded the theory that it was due to the gouty or lithaemic diathesis. That is, that those who through heredity or faulty metabolism are prone to gout, diabetes, migraine, urticaria, furunculosis, bronchitis, asthma, are susceptible to hay fever.

Bostock was himself a sufferer from gout. This position was confirmed by Phöbus of Germany, Herbert, Leflaire, Lermoyez, Ruault, de Dreyfus, Rendu, Drissae, Molinie, Kinnear and others.

In 1873 Blakely reported a series of experiments, proving that the pollen of various plants and grasses was the real cause. In 1882 Daly, of Pittsburg and Harrison Allen first proved the connection between pathological conditions within the nasal fossae and hay fever and asthma.

This was confirmed by Hack of Freiburg in 1883. Sajous in 1883 advanced the idea that certain sensitive areas on the nasal mucous membrane were always responsible for the attacks. He considered that there were three causative factors entering into every case—an underlying neuropathic tendency, a nasal hyperaesthesia, and an external irritant or excitant, which found a receptive field on the sen-

sitive nasal mucous membrane. Roe of Rochester, John N. Mackenzie, R. H. Thomas, in 1883, claimed that there was always associated some abnormal nasal condition causing an over-sensitiveness of the mucous membrane thus affording a receptive field for the external irritant. In 1892, Shawe Tyrrel of Toronto published a paper entitled "A Predisposing Cause of Hay Fever" in which he advanced the uric acid theory. In 1893 Seth Scott of Chicago, advocated the uric acid theory before the meeting of the American Medical Association of that year. Haig's ideas were in accord with Bishop's.

The pollen theory of Blakely was confirmed by Rinz, Marsh, Patton and Elliotson. Every kind of pollen from every order of plant was found capable of acting as an exciting cause in a susceptible individual, if exposure took place at the critical period. No matter how susceptible if the exposure was not at the critical period an attack did not take place.

J. N. Mackenzie did not accept the pollen theory. More recently Dunbar by an elaborate series of experiments found that the pollen of a great number of grasses and plants would produce when introduced into the eye or nose of a susceptible individual a typical attack. On this basis he produced his serum which differs in no way from other antitoxins procured by immunizing the horse—a horse serum antitoxin. Many varied opinions of equally competent observers and experimenters could be cited to show the divergence of opinion as to the etiology of hay fever and asthma. As the treatment is based entirely on the etiology the successful determination of the cause is very essential to the successful treatment of this most distressing class of cases.

Jonathan Wright calls it a reflex neurosis and while he recognizes the intra-nasal lesions as one of the causes and has always found his cases to be improved by treatment directed to this end, he does not feel that too much stress should be laid on this phase of the condition.

F. H. Bosworth was of the opinion that intra-nasal surgery affords permanent relief.

H. Gradle removes all nasal growths and considers it a reflex neurosis.

E. Fletcher Ingals believes that from forty to forty-five per cent. of all cases may be cured by cauterization combined with tonic treatment.

C. E. DeM. Sajous believes when cauterization fails to effect a cure it is always because it has not been carried deeply enough.

Carl Seiler considers it a neurosis and uses sedative sprays and plugs of cotton saturated with sedatives to be worn in the nose. A sponge also is to be worn in the nose to filter the air. He further removes all enlargements within the nose.

C. H. Knight destroys all enlargements combined with general treatment. It would be tiresome and to no useful purpose to extend this list of opinions. The foregoing opinions are not up to date and undoubtedly these well known authorities hold different views at the present time.

During the first fifty years of the history of hay fever only 300 cases were reported in all the literature. Since then the increase in the number of cases has been most remarkable. On the continent, especially in Germany, it is a comparatively rare disease. In England and the United States it is quite prevalent. As early as 1874, the Hay Fever Association of the United States was organized at Bethlehem,

N. H., which has an elevation of 1450 feet. In the United States the zone of greatest prevalence is in Virginia along the Atlantic Seaboard to Eastport, Me., and then westward to the Mississippi river. Only occasionally do cases occur south, west or north of this zone although of late years there has been a constantly increasing number of cases outside of this zone, probably due to changes in the mode of life, to destruction of forests and to changes in the character of the vegetation incident to increase in population. It has a predilection for the Anglo-Saxon race, the English and Americans being particularly susceptible. Cases occurring in Africa and Asia are confined to Americans or English. The Indian, the Negro and the Mongolian seem to be immune. That heredity plays an important role there can be no doubt. Males are the victims more frequently than females. Environment and the particular district are predisposing factors, the brain worker in the city being afflicted out of all proportion to the open air worker in the country.

With the full intention of repeating, I wish to again state that hay fever and asthma belong to the class of reflex neuroses. That the reflex is a simple one in the case of hay fever and a complex one in the case of asthma. The reflex does not ever take place except in the presence of very definite pathological conditions. We will accept at once the fact that some external irritant or stimulant is essential in the case of true hay fever. We must also accept the indisputable evidence proving that a receptive field must be found for the lodgment of the irritant whatever it may be and that this receptive field is within the nasal fossae there can be no doubt. In addition to the two factors just men-

tioned we must have a third, a predisposition on the part of the individual. This predisposition and the receptive field are the two causes which will bear some elaboration. What is it that renders a particular individual predisposed or susceptible to some special irritant? What is it that renders the nerve centers abnormally sensitive to an afferent sensory impulse to the extent that they respond in an exaggerated manner by sending out an active vasomotor and motor efferent impulse? It is very plain that if this central susceptibility could be eliminated we would break one link in the chain and thus destroy our reflex and eliminate the result—hay fever and asthma. It is equally true that if we can eliminate our receptive field we will accomplish the same end by eradicating the point of origin of the afferent impulse. This would tap the fountain at its head and cut off the supply. How much better, however, if we can successfully treat them both and make doubly sure of our cure. In fact it is necessary in the great majority of cases that this should be done. In the recent cases before the reflex has become well seated and the reflex habit of the nerves has been formed or established, elimination of the receptive field may be all that is needed to effect a perfect cure as far as symptoms are concerned. This is no reason however why we should entirely ignore the constitutional element in the case. In the old cases on the other hand we must give equal attention to both. In fact, even when both have been eradicated the reflex habit is seen to persist for some time although this may be due to lack of thoroughness in our treatment. Now this central or nerve nucleus susceptibility is due to what is called the neuropathic state of the patient. This is a mere term and

does not convey to our minds a rational idea of the real underlying cause. I believe that any condition of faulty metabolism or elimination no matter of what character, is the real underlying factor in every instance of this so-called neuropathic tendency or neuropathic state. This may be an hereditary or acquired condition. The individual may inherit the faulty metabolism just as we see examples of a family predisposition to what we broadly call the diatheses. The acquired state is a very familiar one and readily accepted. This faulty metabolism or elimination may be limited to some particular function. There may be only one physiological function of the entire organism not acting up to the normal standard required for the perfect adjustment of the bodily functions or there may be several so affected in the same individual. It makes very little difference for the purpose of this paper whether we call the results of faulty metabolism the uric acid state, lithaemic state, arthritic, rheumatic, gouty, diabetic or what not, the real condition is an autotoxaemia and is the result of some aberrance in the physiological functions of the organism, the detailed study of which leads us into the realm of physiological chemistry. It is this autotoxaemia which is responsible for the so-called neurotic tendency. There is not the perfect adjustment required for the normal standard. That the nervous system suffers is not at all surprising. This then is the central lesion in hay fever and asthma. The local or peripheral lesion lies within the nasal fossae.

Various observers have attempted to limit and indicate some one lesion or pathological condition in the nose as the constant or at least the essential factor per-

taining in every case. That this is absurd need not be emphasized. This one idea theory has resulted in faulty lines of treatment with the attendant ill results. Ill results for the patient and for those that come after as it tends to destroy faith in the treatment. Any pathological condition within the nasal fossae may be the active factor in rendering the nasal mucous membrane susceptible to the external irritant. The nerve terminal supply of the mucous membrane is rendered hypersensitive. The origin for this hypersensitiveness may have been in the very beginning some slight lesion which starting up a nasal reflex has caused a local vaso-motor disturbance resulting in a more exaggerated pathological condition. The longer the particular condition exists the more extensive is the pathological picture we have presenting. It is also true that originally the nose may have been normal but as a result of the toxæmia we have mentioned, there has resulted a local diseased state. When the local lesion is once present whether as a primary or secondary condition the treatment of it must go hand in hand with that of the toxæmia.

The pathology of hay fever and asthma as such is *nil*. Hay fever and asthma are really only symptoms of the underlying pathological condition we have described. To be sure we do have as a result of the continuance of hay fever and asthma real pathological changes locally. The nasal lesions become very decidedly worse as a direct result of the repeated attacks and what was in the beginning only a mild affair becomes eventually a well advanced inflammatory condition. Besides the local results of repeated attacks we have involvement of adjacent parts, the ear being frequently affected to a very serious degree.

The limits of this paper do not permit of a detailed description of the picture these patients present to the clinical observer. That the majority of cases of hay fever eventually develop asthma is a matter of every day observance. In the early stages, especially in early life cases, the hay fever is the predominating or the only feature, but as time goes on and especially in later life the asthma becomes the predominating feature and the one that gives the greatest distress to the patient. The true hay fever cases continue to have only the regular annual attack although some have two yearly. The asthma on the other hand in the extreme cases becomes practically continuous.

There is a class of patients which we cannot group with true hay fever because they do not have regular annual attacks due to a special irritant in the air at that particular time. They do present all the features of these cases aside from this except that the attacks are not so violent or so typical. We may call it nervous catarrh or vaso-motor rhinitis or some other appropriate name. These cases likewise develop asthma and what has been previously stated relating to the etiology and pathology of hay fever with asthma applies in greater part to this class of cases.

The treatment has been well indicated. It consists in eliminating the external irritant when possible. This unfortunately is confined to the few. The pathological chain must be broken. The nasal fossae offer ample opportunity for comprehensive and successful treatment. The auto-toxæmia must not be lost sight of and in each case the particular form of toxæmia must be determined and appropriate treatment instituted. The nasal treatment can usually be completed quickly and the in-

tervals between the attacks should be the time of choice for such measures. The toxæmia may require long continued and painstaking treatment. We have a difficult problem to solve and a most difficult class of patients to deal with, but I am convinced that a careful and comprehensive study of these cases will result in the institution of successful measures for their relief.

In conclusion, I will ask your indulgence while I report some incomplete cases.

Case I. J. B., age 41. Father died of asthma. Has had hay fever and asthma ever since he can remember. Has incapacitated him so that he has not been able to do more than the very lightest work. Has had what he calls "spells" for years. Without any warning "he will suddenly become so that he does not know where he is." This may happen when perfectly quiet as when being shaved. Only lasts a minutes or perhaps a few seconds. Feels no ill effects following it. This indicates the neuropathic element in this case. Has not been able to breathe through his nose for years. Has not been able to sleep at night for many years. Does not know what it is to rest at night. Is very glad when daylight comes although he gets no rest. Feels very tired and exhausted all of the time. Asthma is constant. Has had hay fever every summer since earliest memory. This was soon followed by asthma.

Examination. General appearance of man is that of a poorly nourished individual, anaemic, nervous and discouraged. His asthma is only too evident. The chest shows the usual signs of well developed asthma.

Nasal Examination. The obstruction due to the enlargement of all of the turbinate bones is so marked that nasal breathing is entirely absent. The turbinates press firmly against the septum and in fact fill the nasal fossae.

Treatment. Resection of all of the turbinates sufficiently to establish a patent nasal passage on each side. I first saw the patient on Jan. 13th, 1909. By March 13th, 1909, the nasal work was completed

and healing had taken place. When I saw him at this time on March 13th, 1909, at which time he told me that he did not have any evidence of his asthma, he certainly did not present any evidence. The general improvement was marked. He was sleeping restfully and joyfully. Was making up for the years of lost sleep. Was now sorry when morning came, a striking contrast to the former dread of the long weary sleepless nights. Saw him again August 9th, 1909. Examination of nose shows the parts to be in a very satisfactory condition. No evidence of asthma. Patient says he is perfectly well and very happy. Can breathe through his nose day and night. Saw him again Sept. 23rd, 1909, in response to a letter asking him to call for observation. Good general condition continues. Asthma negative. Did not have hay fever this summer for the first time since he can remember.

Examination of the nose shows the right inferior turbinate beginning to hypertrophy again although the first operation consisted in resecting a good half of this structure. Was told to return in one month for observation as I believed the right inferior turbinate body would require further attention. Patient did not return until Nov. 20th, 1909. At this time he complained of some blocking of the right side of the nose. Examination showed the right inferior turbinate to be sufficiently large to cause blocking of the right side. This structure was again resected in the usual way by cutting away a part of the bony structure together with the overlying soft parts. By Jan. 3rd, 1910, the nasal condition was entirely satisfactory and the patient said that he was thoroughly comfortable and entirely free of any symptoms. This patient has remained in this most excellent and satisfactory condition to date, Sept. 1st, 1910.

This patient received practically no treatment other than that directed to the nasal fossae. I purposely limited it to this as it seemed like a typical case and I wished to see the results of purely local treatment.

Case II. H. N. S., married, 33 years old. Druggist; long hours and closely confined for years. Referred to me by Dr. F. L. Cochrane. Has had hay fever

every August for 20 years, extends well into September. Missed it once only in 20 years, some years ago. Has never had any asthmatic symptoms. Between the attacks of hay fever his nose is stopped up a good part of the time, a chronic cold in the head, during damp weather especially. Whenever bilious, which is quite often, he finds his nasal condition markedly worse. This well illustrates the toxæmia in this particular case. Calomel helps him. The nose is very sensitive to odors or dust. The sense of smell and taste is always acute. At the time of hay fever attack he has asthmatic attacks continuing all through the hay fever attack. Between the hay fever attacks, however, although he has difficult breathing at times he does not have typical asthmatic attacks. During the attacks he is unable to lie down and has to assume the sitting position all night. At this time he cannot eat the least particle of food without causing an attack. The skin is always dry. On examination March 2nd, 1909, he was rejected for life insurance because of chest condition. First came to see me March 9th, 1909, the insurance examination causing him to seek relief.

Examination showed a thin, poorly nourished, anaemic individual of the neurotic type. No asthma in evidence on general observation, but chest showed some evidence. Nose: deviated septum to the right of a marked degree causing pressure on right inferior turbinate. Both the interior turbinates very large. The left middle turbinate region was filled with polypi. Discharge was abundant and foul. Mucous membranes were very anaemic.

March 14th, 1909. Operation. Submucous resection of the septum and resection of both inferior turbinates and some of the polypi removed. No more was done at this sitting because the obstruction made it impossible to secure anaesthesia high up. March 24th, 1909, showed operation well healed and plenty of work to be done in the left middle turbinate region. Patient decided to postpone it.

June 15th, 1909: Says he is feeling better than he has felt for many years. Appearance of the patient indicates this. Ready to complete the work but patient

wished to postpone it. Aug. 15th, 1909, same report: wishes the work finished as hay fever season is near at hand. Told that it was not the ideal time for the work. Did some work however. Removed part of the left middle turbinate and some polypi. Sept. 3rd, 1909. Usually hay fever and asthma comes on the last week in August and continues one month. Has had some slight evidence of hay fever during the last week but not sufficient to give him any discomfort. Just a slight itching and feeling of warmth in the eye, nose and chin. Has tried every known remedy for years without any relief and is very happy that he has at last struck it right, as he says. No asthma whatever. Breathes freely and sleeps all night with mouth shut. Work in nose in middle turbinate region not quite finished, and in view of this the result to date is quite remarkable. This patient was under observation during Sept. and Oct. 1909, and improved every day. Report just read was the most unfavorable that I could obtain. During this time he had tonic treatment, arsenic and strychnine. I saw this patient again on March 10th, 1910. The relief has been permanent and the patient has improved greatly in his general health. Examination shows pus discharging from the ethmoid cells. Patient being now ready to have the work completed the ethmoidal cells were operated upon and removed. This was done on March 24th, 1910. I last saw this patient on April 5th, 1910, and at that time he was perfectly well and was enjoying good health for the first time for years. In conversation over the telephone as late as May 25th, 1910, he gave a good report. While it is true that the hay fever period of this patient does not come until August it is fair to predict that he will be entirely free from an attack, as in August of last year before the work was completed, and his general condition was very much below par, he was practically free from an attack. He says he does not believe he will ever be troubled again.

Case III. J. H., referred by Dr. A. A. Hussey; age 27, clerk, first seen Feb. 25th, 1909. Father died at age of 71; had asthma and heart trouble. Three years ago had bronchitis for three weeks, last Aug. and Sept. 1908; had bronchitis,

asthma, cough, loss of weight. Attacks like the foregoing every two to three weeks, lasting several days up to the last two weeks, during which time he has been under the care of Dr. Hussey and has been free from attacks. Has had discharge from nose however of a watery character. Had what was like hay fever with the attacks; nose was stopped up, had watery discharge.

Examination shows deviated septum, marked to the right with a prominent ridge on the left side. Both inferior turbinates being pressed upon to the extent that there is a distinct and deep impression in each at point of greatest pressure. On March 6th, 1909, submucous resection of septum was done with resection of left inferior turbinate. I wished to resect the right inferior turbinate at the same time but the patient wished the work done in two sittings. Not a good thing to do as a rule. Saw patient frequently up to March 24th; saw him again on April 26th, 1909, nose healed and advised completion of the work. Patient not willing. As far as the work has progressed it is satisfactory. Next seen June 24th, 1909. Has had a severe attack of asthma and has been to Lakewood. Now much better. Intends going to the Catskills for a month. Will have the work completed on return. The right inferior turbinate is very large and needs resection.

Sept. 22nd, 1909; on Sept. 7th, he returned from a stay of 19 days in Liberty, N. Y. Was free from asthma while there. Had an attack of asthma 12 hours after his return to the city lasting one week. Also an attack on the 20th which was worse than the previous attack. That is on the 20th he ate cabbage for dinner at night and had pork and lima beans at noon. That night he was awakened by a profuse watery discharge from the nose lasting six minutes. This was followed by an asthmatic attack, which was of short duration. Now, Sept. 22nd, he feels free from asthma and really quite well. Feels that nasal condition is not satisfactory and wishes to have the work completed.

The foregoing well illustrates the gastro-intestinal auto-intoxication element in this case. This requires attention along

with the nasal condition. Note the very evident connection. This man is of a nervous type and any irritant is certain to result in some reflex phenomena as I very readily demonstrated to my own satisfaction. He said that besides the gastric disturbance, smoking and "nervousness" would give rise to an asthmatic attack, always preceded by the watery discharge from the nose and nasal blocking.

Examination at this time, Sept. 22nd, 1909, shows the right inferior turbinate still large and the left inferior turbinate larger than it was at the last examination.

I advised relief for the above but the patient while he believed it was necessary, was not quite ready. He says the first operation gave him relief and believed further work would be beneficial.

On Oct. 7th, 1909, I again saw this patient. He stated that on the morning of the 6th he had had another asthmatic attack lasting 24 hours. There has been some discharge from the nose although not as much as usual, less than at any former attack. With his attacks he always has pain around the heart and his finger tips become blue. Examination: left side of the nose looks very well. The right inferior turbinate is large and oedematous looking. I put him on nitrohydrochloric acid and advised him to see his family doctor as I believed that in this case the treatment of the conditions above described other than the nasal was very important. In conversation with Dr. Hussey on June 11th, I learned that he had not seen Mr. H. since my last observation on October 7th, 1909, but that he understood that he was very much better.

Case IV. Miss A. M., 30; family history negative. Since early childhood has always contracted colds in the head very readily and often. Exposure to the slightest draft results in a blocking up of the nose. Never has been able to breathe through the nose since she can remember, either day or night. In August she has hay fever and asthma with it. During the rest of the summer she has a few slight asthmatic attacks but all through the winter months she is never free from asthma. Attacks follow so closely that they seem to be continuous. Has had to do office

work and her asthma has been such a handicap that she has almost despaired of ever being able to do any consecutive work.

Examination. Patient presents a very exaggerated picture of an asthmatic. Breathing very labored, mouth open, wheezing very marked and the typical attitude assumed by those using the auxiliary muscles of respiration, a very unhappy and distressing picture. Examination of the chest shows the signs of a well developed case of asthma. Examination of the nasal cavities shows a complete blocking, all of the turbinate bodies being very large and filling completely the nasal fossae. Some polypi are found in the right middle turbinate region.

I first saw this patient on Sept. 18th, 1909. After explaining to her what I intended to do and giving her a very guarded prognosis, I operated on her nose. Both inferior turbinates were resected at the first sitting. When the patient returned for the removal of the packing her asthmatic condition was very decidedly worse. The packing was removed on the 20th and on the 21st, her asthma was better than it has been before the operation. On the 23rd, she said that she felt as if the asthma had left her. This patient remained under observation and treatment constantly. The only general treatment was potassium iodide MX. t. i. d. Without making this history too long I will merely state that subsequently the right middle turbinate was removed and the polypi removed together with the right ethmoid cells which were found to be filled with polypi and granulation tissue. At another sitting the left middle turbinate was removed in part. While these operative measures may seem very radical to many, I assure you however that anything less would have resulted in a failure to bring the good results achieved in this case. By Dec. 22nd, 1909, all the operative work was completed and the wounds were completely healed. On Jan. 12th, 1910, I again saw this patient and she told me that while she had had some evidence of her asthma she had been able to breathe through her nose day and night and was feeling better than she had since she could remember. On March 4th, 1910, she reported for observation and she told me that since her last visit she had

been practically free from asthma and my observation at this time fully corroborated her statement. Examination of the nasal cavities showed a free passage on both sides and no evidence of returning polypi or any abnormal condition. The patient being anaemic she was placed on Bland's made up with nux vomica. To date Sept. 1st, 1910, she has continued to improve and she considers herself cured.

Case V. Mr. F. T. B., aged 27. Father had asthma—an asthmatic family. He has had asthma since his earliest memory. Has learned from the family that he had it in early childhood. With the asthma he has had bronchitis with a constant cough. The only relief he has ever had was about five years ago when he had his nose operated upon by a specialist. This enabled him to breathe through his nose and he had great relief for one year. Since that time he has been getting constantly worse and at the present time he is practically invalidated. He cannot breathe through his nose and the effort to breathe and the constant cough have become so distressing that he feels that unless he can obtain relief life is hardly worth while. The relief he obtained from the former operation on his nose encouraged him to seek relief of a similar character. He accordingly entered St. John's Hospital in this city and was there seen by the attending nose and throat specialist, Dr. Wm. F. Dudley. After examination Dr. Dudley referred the case to me. Examination shows a man of poorly nourished type, and of very poor physical development. The constant effort to breathe being with him all of his life has left its tell-tale signs. He presents the most marked picture of an asthmatic I have ever seen and he looked like an old man so stooped and deformed was he from the years of constant voluntary forced breathing. Examination of the chest shows an asthma so marked that the deformed appearance of the man no longer seems more than an inevitable result. Examination of the nose shows a complete blocking of the nasal passages. On both sides the anterior ends of the inferior turbinates present completely filling the anterior nares. By extending the examination a perforation of the septum of large size is found which from the history is a

result of the operative procedures of five years ago. Further examination shows that both middle turbinates, both inferior turbinates for their posterior half and the posterior half of the septum are so adherent that they present a solid mass with no well defined line of cleavage.

I first saw this patient on Jan. 9th, 1909. I began operative procedures within the nose on Jan. 16th, 1909. It was necessary to construct a new nasal passage on both sides and at the same time preserve as much of the functioning structures of the nose as possible. Without going into the detail of the operation it is sufficient for our purpose to state that it was not completed until August 29th, 1909. The work was not hurried as the man was not in good general condition and a successful endeavor was made to enable him to attend to his work all during the treatment with the exception of two to four days following operative procedures. When the work was completed he had a perfectly free nasal passage on both sides and could breathe comfortably and freely day and night. It was at the cost of considerable effort that this patient learned to breathe through his nose owing to the entire absence of this function for so many years. Improvement in the asthma began just as soon as I was able to establish some breathing capacity which was as early as Jan. 31st, 1909. From this time on the improvement progressed hand in hand with the improved nasal function resulting from the operative procedures and the local treatment. The work was prolonged intentionally. No other treatment was given except the local measures aside from general tonic treatment. This patient was under my constant observation from Jan. 9th, 1909 to Dec. 29th, 1909, with the exception of one month and the improvement in his asthma and general health was very remarkable. From a most distressing picture he changed to one most pleasing to observe. His cough left him, he breathed through his nose day and night; his breathing became natural in character and if it had not been for the stooped over appearance he would not have presented sufficient evidence to the observer to have attracted attention. I last saw this patient on March 9th, 1910, and at this time he

presented no evidence whatever of his asthma. He looked perfectly well and stated that since I last saw him on Dec. 29th he had been free of asthma although he had had a severe attack of grippe in the meantime. The grippe caused him no more inconvenience than such an attack would cause in any one with a normal upper and lower respiratory tract. He considers himself cured of his asthma. In conversation over the telephone more recently this patient states that the good result continues.

The foregoing reports speak for themselves. While it is very true that a series of only five cases is not sufficient to base positive conclusions upon, it is also true that we have at least something very definite in the way of pathologic findings, symptoms, treatment and curative results to present for consideration. Lest there be any misunderstanding I wish to again state that this paper deals only with a specific class of cases and does not consider those cases due to causes other than herein mentioned.

119 Halsey St., Brooklyn, N. Y.

THE ADMINISTRATION OF THE PUBLIC HEALTH—A FORECAST.¹

BY

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If I were to choose a text to follow in the preparation of the paper assigned to me I would feel inclined to select that old but simple adage, "An ounce of prevention is worth an hundred pounds of cure." If we are to fulfill our part in the building up of a defense about the lives of future generations, against bodily ills and social evils, it must be partially at least in the field of preventive medicine. We cannot but be impressed with the widening field of medicine. But a few years ago its practice was narrow and set about by restrictions. Now

¹Read before the Medico-Pharmaceutical League at its Twelfth Annual Meeting, held at the Hotel Astor, New York City, May 23rd, 1910.

it is broad and acknowledges no limitations in its methods of alleviating human suffering whether of mind or body. It now administers to groups or classes as well as to individuals. The medical profession is the only one that works to curtail its own means of livelihood by prevention of disease. This is given ungrudgingly and is a moral quality that distinguishes us from other professions. But however much preventive medicine we cannot foresee the complete extermination of those conditions which evolve disease and which will doubtless multiply with coming years. Whatever has been said in regard to the altruism of our profession, it is a lamentable fact that there are men who creep into the ranks who do not inherently possess the nobler instincts. Doctors should first of all be men, using the word in the finest sense and physicians afterward. Just why our profession is not inviting to men possessing the higher motives of the best citizenship is a debatable question. There seems to be a decreasing incentive for men to undertake the mere hum-drum of medical practice. There is nothing of the spectacular about it. From our earliest history there has been a frequent narrowness of outlook, a too strict adherence to an arbitrary medical standard, a jealousy of outside influences and a skeptical attitude toward innovation of any sort. If then frequently men of mediocre talent become members of our profession it becomes necessary in order to promote the general health and public welfare of the community, secure proper registration of vital statistics and the record of dangerous communicable diseases to hold the whip of the law over the recalcitrants in the profession who would become a menace to the community by a total disregard of law, decency and order. This has given rise to the formation of state

and municipal departments of health with their health officers whose duties it is to enforce measures for the public good. It is common knowledge the ineffectual results that are often obtained by these departments even though there may be a most faithful attempt at discharge of duty. This is often due to conflicting with other departments of law and order established for the enforcement of measures for public safety ostensibly intended for the good of the greatest number. Again they may fail in their efficacy because they are not empowered to act upon their judgment and because they have ignorance, custom and self-interest to contend with. They may come in contact with realty corporations. They are criticised when they are indolent and abused when they are aggressive. If a large sum of money is called for to maintain the efficiency of a department, the cry of graft is raised. If the money appropriated is not sufficient to do justice and the department is hampered in its work, the officials are accused of incompetency. The pay of health officers is often entirely inadequate to the knowledge and ability expected of them and the seriousness of their work. For this reason some of the best fitted medical men refuse to occupy the office, preferring to remain unfettered in private practice rather than to occupy the poorly paid, little appreciated, much abused office. These and other reasons have caused an agitation from time to time to add to the dignity of public health administration by the establishment of a national department of health, with a cabinet officer who is a physician at its head. This has been prominently brought before the country of late by the introduction of the Owen bill at the second session of the 61st Congress. A very powerful medical organization of this

country that has been criticised severely from certain quarters for its so-called attempts at autocracy is said to be behind the bill, while it is said on the other hand that certain drug and proprietary medicine interests are opposed to the bill. The present method of the solving of public health problems is certainly not all that it should be but the question is, are the doctors of the United States ready to establish a great central system which shall be the hub of their medical organization and the regulator of their modes and methods of dealing with health problems and the counterpart of other national departments for the proper administration of the public good. The question is being forced upon us and sooner or later we must answer it by bringing influence to bear upon our legislators. Every doctor is entitled to a voice and should inform himself as to the issue. All prejudice should be laid aside and the question studied in the light of past experiences and future needs. It is argued by some that what we need most is a reform in our present system of public health administration. This is not reasonable for we have no system at present. We have a chaotic and almost hopeless confusion, there being so many systems that experts are liable to stop study and count on their fingers when you ask them how many kinds there are. There is the Bureau of Pure Food and Drugs, the Bureau of Chemistry, the Bureau of Animal Industry, of Vital Statistics, of Sanitation, the United States Naval War and Marine Hospital Service, et cetera. Some of these bureaus are under the domination of the Department of War, others under the Department of the Interior, and still others under the Department of Agriculture. Our Department of Agriculture is given about \$8,000,000 annually for plants, pigs, cattle,

bugs, and beetles, while the millions that have been appropriated in recent years for the building up of our powerful navy has caused endless wonder and approbation on the one hand and a great amount of caustic criticism on the other. There is surely a striking contrast, however, when one considers the small amount that has ever been set aside for biologic research or the search for germs. It is not the intent to depredate the good work of the bureaus above mentioned, nor of the excellent services performed by the U. S. War, Naval and Marine Hospital services; the latter is chiefly concerned with maritime and quarantine measures. In fact, it is not a provision of the Owen bill that either the medical department of the Army or Navy be under the administration of the proposed National Department of Health. There are some that regard the idea of a National Health Department as a purely academic question, and not a good administrative policy, that the time is not ripe yet for a separate cabinet department to be known as the National Department of Health, but that it should come as a process of evolution. Notwithstanding this fact our medical system such as it is, founded at a time when our national life was simple, has nevertheless shown a remarkable elasticity in adapting itself to the ever changing conditions and increased complexity of a rapidly developing age. President Taft when visited by a delegation of eighteen doctors last summer for his opinion regarding a national department of health stated in his most pleasing and versatile manner to the committee that he thought it should be less pretentious and ask merely for a bureau and that later it might be evolved into a department. A Surgeon general of the Marine Hospital Service has gone so far as to say that there

were not over two or perhaps three doctors in the whole United States with sufficient administrative ability to preside over such a department. If this were true it would certainly be a sad commentary upon our noble profession. Can an entire profession be so given over to an unending record of faithful services in the pursuance of the proper discharge of the Hippocratic oath that we have developed no administrative ability? Can an entire profession be filled with incompetents? Are all the really able men in the ranks of statesmen and other professions? The function of a National Department of Health should be the human life problem for the preservation and elevation of the human race. It should have entire supervision over the manufacture of all serums and antitoxins. When disease and infection become interstate in character it should be under the supervision of a federal department which should have a jurisdiction similar to the United States courts. The sanitary and engineering problems connected with the question of malarial, typhoid and yellow fever are of too costly a nature ever to be handled by local or state governments working independently of each other and often at cross purposes. No local state legislature can ever protect a state from an infection without its borders and therefore beyond its control. If we trace the course of the streams which flow from Pennsylvania, Connecticut and Vermont waters into New York waters, we can readily see that it will be of no use for us to institute expensive drainage system if a neighboring state neglects similar precautions. The National Government many years ago undertook the maintenance of river and harbor improvement and until it takes hold of the problems connected with the propagation of typhoid fever and the

diseases transmitted by the mosquito we shall never be rid of them. National health is national wealth. Great epidemics always hinder the wheels of commerce, if they do not bring them to a standstill altogether. It is impossible at this time to go into details as to the operation or organization of a national department of health. It should propose at least to do three important things. It should have supervision over all means of preventing epidemics and warding off pestilence that are national or interstate in character, the establishment of national hygienic laboratories for the manufacture of curative serum and antitoxins. Second, the supervision of the construction and maintenance of sanatoria for the sufferers from the Great White Plague which carries off 160,000 and upward of people annually. The death rate from cancer is constantly increasing and up to the present time has presented the most baffling problem that the student of human pathology has had to wrestle with. It seems to follow none of the established laws of other diseases. Poverty, alcoholism and vice seem to play no part in its etiology and places it apart from all other known maladies. Its steady increase in spite of all means for fighting it which have been devised by man after patient and painstaking study for years would indicate the necessity of the governmental establishment of laboratories for cancer research. Third, a more or less rigid supervision over state and local health boards having control over the better understood and more common diseases. The apparent advantage of the district visiting nurses established in so many of our large cities especially in connection with tuberculosis clinics for the seeking out and caring for incipient cases of tuberculosis, and the success that has crowned the effort of

the department of social service established by the Massachusetts General Hospital has led the writer to predict the establishment in the not too far distant future of subsidiary bureaus of health located at convenient locations according to population. This would eventually put the administration of the local public health on much the same basis as our educational system and its public schools, or our system of maintaining law and order through the various courts and police stations or our postoffice system with its main buildings and distributing stations. All of these systems for the protection and of the well being of the populace have been developed by a process of evolution from a more or less crude state to a complete organization of usefulness. Although we have our hospitals and our free dispensaries, our efficient health boards for the control of infectious and contagious diseases, the masses of the people making up what might be called the middle classes have no proper medical supervision. The hospitals take care of the very ill and the emergency cases, and our free dispensaries supply the needs of the very poor. Dispensaries are abused in many cases as is well known. Even the physicians in attendance serve without pay which is an injustice. In many cases capable young physicians feel forced by necessity to influence clinic patients to visit them at their offices and in that way help to build up practice. Although in many cases there may be no injustice in this, still on the other hand it seems contrary to the purpose for which clinics are created.

The public including its many corporate bodies have become so accustomed to the altruistic methods of our profession that in many public events, patriotic celebrations, etc., the medical profession is presumed to

furnish its services gratis while nurses, orderlies and the like receive pay.

At a recent celebration in the city, the medical men not only served faithfully and ungrudgingly without pay, but were supposed either to go without meat and drink or to get it under humiliating circumstances, while the most ordinary menial left his duties at the tap of the bell to return at his leisure and with ample money supplied him for his needs.

Still again, many young physicians well endowed with the ability necessary to make successful clinicians are deterred from gaining their experience in this way, principally because a large amount of valuable time is required, with no money remuneration, the latter being to them often an urgent necessity in the first years after graduation. In consequence the clinics lose what might prove to be valuable men and they are forced out into private practice improperly equipped. On the other hand, incompetent men many times with no proper instinct to make of themselves good clinicians but with a self-supporting income from some source, make up a large proportion of our clinical staffs.

Bureaus of health would in a measure obviate this. Each bureau with its own building and its corps of physicians would be the administrative health bureau for the particular neighborhood in which it was located. One or more experienced physicians would be in charge with a dozen or more assistants according to the needs of the locality. These all to be under municipal pay as the whole system would be under the municipal control and supported from the city's funds. The duties of the assistant municipal physicians would be to visit from time to time daily or tri-weekly every family within their district, attend

cases of illness where needed, advise regarding sanitation and infection, report cases of violation of law. Conditions and circumstances or cases of illness which they were incompetent to handle would be reported to their superior officers whose duty it would then be to direct and take charge of. A system of promotion according to time of service and ability would also be a part of the system. The admission into the ranks of the physicians attached to the Bureau of Public Health would be by competitive examination. The whole system would be a valuable clinic for the physician before entering private practice, for he would get actual experience in visiting families in their homes which is never gotten in either the dispensary or the hospital. This would in no wise affect the private practitioner or his livelihood. There would always be a demand for the private physician by the better classes the same as we have private tutors although there is a public school system, or that we have private detective agencies as well as a public police system. The whole system would tend to elevate private practice rather than to do it harm. For instance, although the people at large would have a perfect right to apply at a public health station to have a doctor sent to them, the tendency of the people at large would be to seek the services of the private physician if they could afford it. If it were not within their means, then the private physician would not be anxious to have them for a patron. As an embellishment to a public health system such as this, it should be made a misdemeanor not to pay the private doctor since the municipality had provided a means by which medical attendance could be had without pay, just as the state at the present time assigns legal aid to the person without funds, so would

the municipality honor the bill of a doctor who had been imposed upon by persons who if they had chosen could have gotten free medical services. The local public health bureaus could also appropriately maintain supervision over practitioners in general, so far as irregular practices and unsanitary septic methods are concerned.

It is a lamentable fact that such supervision should be necessary over an honored profession, but when we consider the rank injustices perpetrated by men holding medical diplomas from reputable schools, and licensed by the state, and languishing snugly behind the protecting arm of membership in their county medical societies, then the need of some sort of supervision seems entirely in place.

The medical profession should be eager to aid in its own housecleaning. Revocation of licenses similar to disbarment proceedings in the profession of law would seem to be the only practical way to keep the medical profession at the high level it was intended to occupy.

Young physicians upon graduating would elect whether they should wish to enter upon private practice at once or enter the ranks of municipal health officers. The advantages to be derived from a system of this kind are so varied and will multiply so fast as the system is elaborated that it is impossible to recapitulate them all.

It is said that one of our largest life insurance companies would be willing to pay \$10,000,000 if the government would permit them to have in their employ doctors whose sole duties would be to medically supervise the lives of the policy holders, not only in times of sickness but in times of health, prolonging their lives by keeping their healths up to concert pitch, so to speak. If this be good for insurance companies, why would

not a similar policy be good for the commonwealth?

Only by constant supervision in the home, by studying the needs of the people as to their daily work, their ignorance or their poverty, can the greatest good be accomplished. To get behind the symptoms of disease to the root of all the trouble should be the physician's ideal. Definite aid is given and the patient started on the right track. The immoral are given a new view of life, often the first step in moral reclamation. In the foregoing I have tried to state the case for a national department of health and its subsidiary bodies. The great underlying objection to such a system rests in fear of its power. However simple and unpretentious it starts, there is widespread concern lest once given life it will grow in function and power until it interferes with the liberties of the people. But in its simplest form as a guardian of the public welfare it involves none of these things but gives the fullest measure of protection to the people of the United States, the greatest country in the world.

46 W. 48th St., New York City.

AN INTERESTING CASE OF FRIEDREICH'S ATAXIA IN A CHILD FIVE AND A HALF YEARS OF AGE.¹

BY

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There are a number of diseases of the central nervous system whose cause is congenital hypoplasia of certain parts of the

brain or spinal cord, and one of these diseases, in accordance with modern experience, is the group of hereditary or family ataxias.

Friedreich was the first to recognize a certain form of tabes of an hereditary nature. Two years after Duchenne gave a classical description of locomotor ataxia, Brousse called the congenital or hereditary form of tabes Friedreich's ataxia. The main symptom of this disease is an insidious onset of ataxia, that is, starting in the lower extremities and progressing up into the upper extremities, coupled with a loss of patellar reflexes and the absence of sensory and sphincter disturbances.

Pathologically Friedreich himself, and according to the investigations of Schultze, found that there was a great degeneration of the posterior columns of the cord. Following Friedreich's exposition of this disease there were reports of other investigators supporting his findings and giving other details of the pathology of this disease.

In the course of these reports we find cases analogous in the onset and symptomatology to Friedreich's, yet differing from the pathology of that disease in very important points.

Nonne reported hereditary ataxias whose pathological condition was congenital hypoplasia of the cells of the cerebellum, and his cases as well as others that came under the observation of P. Marie, were grouped by the latter author, as a special group of the so-called Héréd-Ataxie-Cerebelleuse. The main symptom of these cases was a progressive ataxia of a cerebellar nature occurring in families in which the patellar reflexes were rather exaggerated and not absent as in pure cases described by Friedreich. Alongside of that symptom

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there was also found affection of the optic nerve and the oculo-motor.

In the course of time there were noticed intermediary cases, viz., cases having both the pathological condition of the Friedreich's and cases of the Marie type. On the other hand, Senator reported cases of the Marie type that in the course of time lost

or even in various generations, sometimes one or two generations being omitted from the chain. It is very rare that a case should occur in a family without any predecessor, and it is for this reason that I report my case, which is just one in kind.

As a rule, symptoms begin between the tenth and twentieth year of age, and ex-



Position of limbs in normal child.



Marked hypotonia of knee joints of the reported case of Friedreich's Ataxia.

the patellar reflexes and assumed the character of Friedreich's ataxia, and anatomically they presented the characteristics of both types, viz., the hypoplasia of the cerebellar tissue and the sclerosis of the posterior columns of the cord.

Clinically speaking, these cases occur in families (two or more in the same family)

tremely seldom as early as the third or fourth year, but I have been able to find no case in the literature where the symptoms assumed such grave proportions in the early age of three years, as in the case I desire to present to you.

Another point of importance in my case is the insidious onset which was of rather

short duration, probably six months. After the end of that period symptoms began to assume a grave character.

G. W., male, aged $5\frac{1}{2}$ years. Family history negative as to tuberculosis, alcoholism or syphilis. Child was born after normal labor, a breast fed baby; was one year old when began teething without convulsions, one and a quarter years old when he began walking, and $1\frac{1}{2}$ years old when he began

three times a week for two weeks, and then once every day, always in the morning soon after rising. This continued for six months, at the end of which time he was vomiting a few times a day. No medication could stop it.

During these six months, father noticed that his gait began to be slightly unsteady and that he could not run about as heretofore. During these six months he also



Position of ankle joints in normal child.



Marked hypotonia of ankle joints in reported case of Friedreich's Ataxia.

talking. Was a well nourished and robust baby up to the age of three years. At that time, vomiting without apparent cause at the rate of once in two or three months after drinking a cup of tea. Two and a half years ago his vomiting came on once every week, soon after rising in the morning, stomach being empty. After a few weeks the vomiting became more frequent,

complained of severe headache, then vomiting suddenly ceased and the headache left the patient when he was taken ill with fever which left him after three days, but unable to rise or walk without being supported, and that condition is present today. Six months after the onset of this fever he began to show an ataxia in the upper extremities which is fully

developed today. The musculature of the body is in decidedly hypotonic state; patellar reflexes absent. Argyll-Robertson pupil present.

The gait is that of a typical tabes; speech is rather slow. Examination of the fundi of the eyes showed negative results. No nystagmus; hearing normal. Marked ataxia in the upper extremities; no disturbance of sensation, sphincters normal. Intelligence of the child is absolutely intact. Nogouchi's modification of Wasserman's reaction of the blood is positive. The child is unable to walk or stand without being supported; deep muscular sense gone; otherwise doing very well.

1111 Second St., New York.

THE MEDICAL LIBRARY AND ITS INFLUENCE ON MEDICAL CULTURE AND REMUNERATION.

BY

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Chicago.

When I came to Chicago in 1882, the Public Library was housed in the uppermost story of the City Hall and was under the management of that prince and pioneer of librarians, Wm. F. Pool. One north room contained the medical department, which was made up of donations from the Chicago Medical Society, from local medical journals and from individuals. No additions were purchased by the library board and little attention was bestowed upon the so-called medical department by the management. While a student and interne in the County Hospital I often visited this, the only medical library in Chicago, and remember my wonder that I was always alone, meeting no other readers and seeing no attendants.

The present conditions in Chicago are quite striking. The Crerar Library, in the

Marshall Field building contains a wonderful collection of medical literature which is rapidly approaching a condition of completeness comparable only with the National Library at Washington and the Library of the Academy of Medicine of New York and of similar organizations in Boston and Philadelphia. A large reading room with excellent tables is provided quite away from the general reading room and trained attendants are at hand to assist the readers who crowd every table from early in the morning to the late closing hour. All the current medical journals are on file and are never away at the binders and inaccessible, for the binding is done in the building. The books are conveniently classified and very completely catalogued.

But this is not the only medical library in Chicago. Each of the medical schools and the University of Chicago has its own medical library for the use of students and professors. The collections are not very complete but they are large enough to give the students a conception of the medical horizon which those of a decade ago rarely attained. They are large enough also to allow improved methods of teaching which, unfortunately, have not been very generally adopted.

For years the medical school has been too obviously a trade school. It has been so managed and the instruction has been on such a plan that the university has not given it that recognition as cultural training which the school of engineering has commanded. The motive and method of the medical school has been narrow and smug. Fortunately for our profession which is now reaping the full measure of disgrace from such past neglect, a few schools have set examples of the highest standard in motive and method and in almost every school ex-

ceptional teachers have striven more or less wisely, more or less successfully for better things. These teachers may not know the extent of their influence on a minority of their students but that influence was felt and will be more strongly felt in the future.

The professional man is distinguished from the tradesman by his mental horizon. The tradesman has a personal outlook, large or small according to the extent of his personal experience. The professional man's horizon is bounded by his knowledge of the experience of the whole profession in the whole world, modern and ancient, national and international.

The tradesman is fixed in his ways and means and adapts himself only with the greatest difficulty to unexpected emergencies and unfamiliar surroundings. The professional man, however, who is familiar with the experience of the world of his profession can scarcely meet an emergency which he does not share in memory with thousands of his colleagues. The education of the tradesman is designed to produce such skill as will produce the most uniform standard of commercially available excellence in the work of his hands. The education of the professional man should attain or be designed to attain the most comprehensive and masterful conception in the scholar of the complicated relations he may meet in his professional experience. The tradesman must produce the largest possible product of a definite but not necessarily excellent standard. His whole duty is to his employer as expressed in the product of his labor. If he has any other obligation it is toward himself as expressed in obligation to his class or trade. The professional man owes his first obligation to society as a whole. The doctor, for example were he a tradesman would have his door open to

every patient to sell him such services as he might demand; now an abortion, now a dose of poison to relieve a loved friend of the horrors and sufferings of cancer, now a placebo for imagined ills. How often is the tradesman or the so-called business man shocked at the refusal of the doctor to use his knowledge profitably for a purpose which seems humane, reasonable and charitable!

The medical library furnishes the most complete if not the only possible record of the experience of the medical profession. The text books of medicine are abstracts of this experience, incomplete, abridged and colored by the idiosyncrasy and mental attitude of the authors or editors. The physician who goes to his text books and cyclopedias alone for the experience of the medical profession of the world will get a telescopic view with the telescope reversed. These views map-like and comprehensive are corrected by the study of the original material as found only in the medical library. This study should be a large factor in medical education and in post graduate study. It orients the cyclopedic and text book view and reduces their horizon to the proper perspective.

It is not difficult to understand the slow progress of pedagogy in the medical school. Barring the exceptional teacher the ancient method of Edinburg and Paris prevails in most colleges with only the modern graft of sapless, time consuming and unrelated laboratory course. The natural conservatism of our profession has been further fixed in our educational institutions by the China-like written examination demanded by our state examinations for license to practice medicine. The medical school has become one great quiz class. The best teacher is the best quiz master. Our medical educa-

tion is thus co-ordinate with the catechism classes of the church.

With such a system of instruction, for it can not be called education, the general tradesman-like attitude of the medical profession in relation to fads such as the X-ray treatment, the Bier's treatment and many other methods of limited or doubtful utility can also be understood.

The lumber room behind many a doctor's office stands as a mute reminder of the easy credulity of our profession to the suave argument if not instruction of the traveling salesman. The ready acceptance of methods of doubtful utility, soon places its monument more conspicuously in the cemetery or in the sad memory of a community. With what tradesman-like avidity did we receive the tuberculin cure of consumption! How eagerly was the Crede ointment rubbed into our unfortunate patients dying of septicaemia! How many felons were opened and foreskins cut off under the anaesthesia produced by the injection of cocain into the cerebro-spinal lake! What numbers of questionable procedures are now being undertaken in the profound sleep of scopolamin-morphine injections! In the same category and often with the same mute monuments are the opposite acts of blind madness, such as the failure to vaccinate against smallpox, to use the serum for and against diphtheria, and the mercurials for syphilis. These fads and obstinate acts of conservatism are not the only evidences of lack of medical culture and rational perspective which face us as a profession, but they suffice to enforce our argument.

The reward of the medical profession in our economic system depends upon the general standard of usefulness of the united

profession. Where medical culture is low and the quality of the men who compose it is inferior the compensation is also low. Where the doctor is "the wise and the good" doctor, the economic reward increases. But the pay is not for personal excellence but for a general professional superiority. No trade unionism can raise the doctor's fee. It is the public recognition of the prevailing high standard of the whole profession that commands the economic reward. The system of the union may help the "lame ducks" but it can not help the reputation of the medical faculty.

It appears to me little short of a catastrophe that so much attention is now given to the trades-union aspects of our medical societies and so little to the promotion of medical culture. With the trades-union movement in medicine has come the idea of medical institutes, similar to the teachers' institutes which preceded professional pedagogic training. These medical institutes may have a place in supplementing an inadequate medical education, but they promote sordid mediocrity and encourage the tradesman's attitude of mind rather than that traditional motive of our profession which is after all the only thing which dignifies our vocation. Describe the useful doctor's doings for only a single week in the language of the street and you could not hire a scullion or even a scavenger to go through the same manipulations for twice the doctor's fees. It is the attitude of mind and motive which ennoble menial personal service.

Why is it that the lackey's uniform, the dress coat of the butler and the waiter, the white coat of the barber and the cook's cap are hated, detested and abhorred by every high minded young man, while the obstet-

rical and surgical gown and cap are put on with such pride after years of painful, expensive and anxious preparation? It is because the traditions of our profession, the motives and ethics of doctors in the past have earned the esteem, the respect and the confidence of the public at large.

The unselfish efforts of medical men to accomplish good outside any tradesman-like duty gives our profession its enviable reputation. The tardy protection of the world from cholera and from yellow fever, the antituberculosis and antiplague crusades, the fresh air and pure milk societies for saving the babies are the real ennobling acts of medicine. It was the medical service of the Japanese army and navy which eventuated the struggle between Russia and Japan. It will be the service of a national medical profession which in the near future determines the end of the economic struggle between the yellow and the white.

The medical library must be a potent factor in medical culture. It contains the record of the efforts, ideas, hopes and fears of all medical men in the world. Its mastery is not easy. Even a conception of its extent and possibilities is difficult to attain. It should be an engine of medical education and culture. Few men have time in the active years of practice to study in the medical library but if they are trained in the use of the library in their college days they need not waste much time in ineffectual rummaging. They can go and read and come away.

The library promotes medical modesty, close observation, accurate notation and a critical judgment of the evidences of our senses. Reading makes a full man, but in medicine a cautious one.

RHEUMATISM—ITS SYMPTOMS AND DIFFERENTIAL DIAGNOSIS.¹

BY

SIDNEY V. HAAS, M. D.,

Pediatrist to Lebanon Hospital; Physician to Hawthorne Home for Crippled Children; Assistant, Dept. Pediatrics, Columbia University.

There are not many diseases in which the symptomatology in the juvenile and adult type differs so markedly as it does in rheumatism.

In the adult, the type is characteristic; in childhood, on the other hand, the disease presents many pictures. For this reason, age, previous history, heredity, sex, etc., are of prime importance in arriving at a diagnosis in early life.

If one were to attempt to draw a picture of joint rheumatism as it most commonly presents itself in childhood, it would be about as follows: A child who has been enjoying usual good health, complains of pains in the limbs, or in only one limb, often called growing pains—and shows disinclination to activity. An examination shows a temperature of 100 to 101.5. Pulse rate increased slightly, if any.

An examination of the extremities shows nothing, or perhaps a slight swelling of wrist or knee, or of the small joints of the hands or feet, with some stiffness of the adjacent tendons.

There is no redness, and little if any tenderness.

This condition persists for a few days or weeks.

Salicylates relieve the pain and reduce the temperature.

Upon a later examination a cardiac murmur is heard over the apex, which usually persists.

¹Read before the Soc. of Alumni of Lebanon Hospital, Dec. 1, 1909.

There are cases without temperature or disability, in which a recent endocarditis explains an anaemia which has become marked.

Occasionally a case is identical in character with that of the adult. The onset may be gradual but is usually sudden.

The diagnosis must take into consideration:

The previous history, wherein tonsillitis, scarlet fever, less frequently measles, endocarditis, pericarditis, pleurisy, rheumatism, chorea or a combination of these are of great importance.

The present history is of little or no value excepting in straightforward cases.

The age, inasmuch as the disease is almost unknown under two years; and uncommon under five years.

The sex; in childhood females are more frequently affected than males; in adult life the two sexes are affected about equally.

Heredity plays an important role. This does not mean that the disease is transmitted, the tendency certainly is. From twenty-five to thirty-five per cent. of cases give a family history of rheumatism, chorea or cardiac disease.

The temperature is usually under 101.5; infrequently over 103, and persisting ordinarily only a few days.

The pulse, excepting as a result of the acute endocarditis, is not more rapid than the temperature would warrant.

The skin is sometimes the seat of an *erythema multiformi*, which occurs as a macular or papular lesion, of bright red color, paling on pressure with a tendency to eccentric extension; often passing through the various ecchymotic shades. The distribution is symmetrical and bilateral upon the back of the hands, forearm, face, neck, and behind the ears; also upon the

dorsum of the feet and knees. Sometimes it is general.

The skin is also sometimes the seat of *erythema nodosum* or *peliosis rheumatica*, which occurs as a round or oval tender node; in size, from a split pea to a split walnut, projecting above the surface and situated upon the shins, sometimes upon other parts. At first red in color, and passing through the various ecchymotic shades as they disappear.

Fibrous nodules, so-called, vary in size from a pin head to that of an almond, or larger; situated just beneath the skin. They are not tender, are found chiefly in the vicinity of joints, upon the extensor surfaces, at the back of the elbow, margin of the patella; also along the vertebral spines, extensor tendons of hands and feet; and in the scalp. They vary in number from a few to fifty or more; come in crops appearing rather rapidly and taking a long time to entirely disappear. They are considered as denoting a severe type of disease, and when present are exceedingly characteristic of rheumatism in childhood.

As in the adult, any joint or combination of joints may become affected. The smaller joints are more frequently affected than in the adult. The swelling is rarely very great, it may be so slight as to escape notice. The tendons about the joint and for some distance along their course may be stiff and tender. This is somewhat characteristic.

There is rarely noticeable redness or heat. Motion is possible except in the most aggravated cases. In fact the arthritis has little in common with the picture as seen in the adult. As Cheadle puts it, "Arthritis is at its minimum, endocarditis is at its maximum."

In the rheumatism of childhood cardiac disease is most prominent. Only in a few cases in which there is arthritis does the endocardium escape. It may begin with the arthritis but usually is found later.

Frequently it is only the expression of the rheumatism, or it may be accompanied by chorea or by one of the characteristic skin manifestations of rheumatism.

The valve most frequently affected is the mitral, after that the aortic. A reduplication of the second sound at the apex is usually indicative of a beginning endocarditis.

In spite of these sounds in the heart there may be no fever, increase in pulse rate, or dyspnoea.

In some cases the murmur disappears after a time but in most instances it persists. *Relapses* are common.

Pericarditis may be the only sign of rheumatism, usually it is accompanied by some other manifestation. Like the endocarditis, it is usually subacute and tends to relapse.

Pleurisy as an expression of rheumatism is fairly common. It has been stated to occur in 10% of the cases, but this estimate is probably too high.

Tonsillitis as a manifestation of the rheumatic state can hardly be denied, in spite of the fact that it is such a common affection and so often occurs without rheumatism. It precedes articular rheumatism in 25% of cases.

Disturbances in the blood vessels such as thrombosis, embolism, etc., are uncommon, and occur only as a result of the cardiac condition.

Anaemia, however, is a marked feature of rheumatism in childhood.

Meningitis as a manifestation of rheumatism, if it exists at all must be exceed-

ingly rare. Personally I have never seen it in childhood.

Chorea must be considered a manifestation of rheumatism, it sometimes precedes, sometimes follows the arthritis or endocarditis.

Nervous symptoms in the form of emotional excitability are prominent in childhood, according to some observers, but this is not my experience.

Muscles are sometimes the seat of pain in true articular rheumatism, the pain being reflected from a neighboring joint. This is well shown in rheumatic torticollis.

Epistaxis is fairly frequent in children suffering from rheumatism.

Excepting in severe cases the tongue is neither coated nor dry.

The urine in the ordinary cases is not changed.

The acid profuse sweating of the adult is also absent in childhood.

The blood picture shows nothing characteristic.

Differential Diagnosis. The diagnosis of rheumatism in early life is sometimes very difficult even when the case is carefully studied. There are many conditions with which it may be confounded. The more common of these are the following:

Scurvy. This is most frequently mistaken for rheumatism. It is only necessary to remember, however, that rheumatism is never seen before two years, and scurvy rarely after that time. Whatever doubt exists can be cleared up within 48 hours by the administration of orange juice or potato in a case of questionable diet. It must not be forgotten, however, that scurvy may occur after the second year.

Syphilis. Here the diagnosis is more difficult. The pain is usually severe; the

swelling is more along the shaft of the bones than in the joint; the pain is worse at night; and there are usually other signs of the disease present.

The pseudo-paralysis due to a syphilitic epiphysitis need only be mentioned; its occurrence in early infancy makes it necessary to diagnose it from Erb's palsy, rather than from rheumatism.

Acute pyaemic arthritis of infants. This when it involves several joints, and is of gradual onset, is frequently mistaken for rheumatism. The early age, usually under six months, and the presence of temperature, and the blood picture will serve to differentiate it both from rheumatism and scurvy. In the acute cases, the high temperature, the great swelling, and local inflammation make the diagnosis unmistakable. In this connection must be mentioned the pneumococcic and gonococcic joints.

Osteo-myelitis. In older children this process when arising in the neighborhood of a joint, as it usually does, may be mistaken for rheumatism; but the high temperature and severe local process will clear the diagnosis. It is just in these cases however, that the use of salicylates is sometimes so valuable in assisting in making a diagnosis.

Tuberculosis of joints. In this condition the rheumatism is more apt to be mistaken for a tuberculous joint than the tuberculous joint for rheumatism.

The slower onset, the tendency to involve one joint, the history of exposure to infection, the various tests which have been placed at our disposal; the absence of benefit from salicylates, all these should make the diagnosis plain. There is however a type of non-articular rheumatism which is not very rare and is frequently mistaken

for a tuberculous joint. Three cases among children between six and nine years of age have been observed by me; the hip is the joint involved; the onset is sudden, often at night; temperature around 102, pain is severe, there is complete disability; limitation of motion is marked, especially abduction and rotation. Under salicylates it rapidly clears up.

That this type of rheumatism is liable to be mistaken for tuberculosis may be judged from the fact that I made a false diagnosis in the first case, and two other men made the mistake in the second and third cases.

Flat foot is a condition frequently mistaken for rheumatism. This may be present in any child who is walking; may occur in one or both feet; with pain localized either in ankle, knee or hip. An inspection of the feet, the absence of endocarditis; and the lack of benefit from salicylates, with relief upon the use of proper shoes and appropriate treatment will make the diagnosis.

Trauma may in the absence of history be mistaken for rheumatism, especially when a synovitis supervenes; but this is almost invariably in one joint, with no temperature, and is apt to be more painful than a true rheumatism.

There is, however, one condition due to trauma that is so common as to require mention. Children between eighteen months and three years, while being led by the hand stumble, and in the effort of the person holding the hand, to prevent a fall, there is a quick jerk; at once the arm falls helpless by the side; the child screams with pain and continues to do so upon every renewal of motion of the arm, active or passive. Upon examination the whole upper extremity is sensitive to the touch, perhaps a little more so in the neighborhood of the wrist, and it is here that the trouble lies in

CORRESPONDENCE.

AN INQUIRY.

To the Editor of AMERICAN MEDICINE:

As one of the founders of AMERICAN MEDICINE as well as one of its uninterrupted readers, I beg to draw attention to editorial paragraphs in the July issue of the journal, p. 342-3 on phases of sects in medicine. I am unable to appreciate why a part of the medical profession may place distinguishing or defining words before their names as physicians, and condemn the use of the words "eclectic" and "homeopath" in similar positions as to others. Is not the act of one as consistent as that of the other? Are not all these words distinguishing prefixes? I fail to see that the use of one is permissible on ethical grounds if the others are not so. The editorial referred to regards it as highly objectionable for eclectic and homeopath physicians to make use of these prefixes, and at the same time commends the use of a prefix for regular physicians. Why would it not be in the interest of harmony for all the so-called schools to abstain from the use of any prefixes at all? I can better make clear my position by referring to a personal experience. About twelve years ago, when the act creating a state board of medical examination and registration in Indiana became a law, blanks were sent out to physicians to be filled out for registration, each in his own county, and the mixed board undertook to classify physicians throughout the State as to schools. Since I didn't sympathize with these arbitrary distinctions, I didn't answer the question—"To what school do you belong?" I left this space blank. In due time the annual report of the board was published, and I received a copy, and discovered that I had been classified, thus: "Not classed." After a time I wrote a protest to the board saying I did not wish to be classified and that the board had done so, and that its act was arbitrary and injurious.

I set forth my reasons for my position as follows: The lines dividing so-called schools were uncertain, arbitrary, variable in different parts of the country, and were based upon therapeutic differences of opinion, not facts, etc. The

the epiphysis. A simple splint such as a few turns of adhesive plaster around the wrist, gives prompt and permanent relief. After three days nothing is noticed. This is the "Painful Paralysis of Infants," of the French.

Rheumatoid arthritis is exceedingly difficult to differentiate from rheumatism in the early stage. It is, however, very rare in children under ten years of age; there is no endocarditis; and salicylates have no effect upon the process. When atrophy and crepitus occur there is of course no difficulty.

Rickets. When pain occurs in the joints in this disease it is probably scurvy in the younger children. Among older children the two diseases can hardly be confounded.

Local oedema, or angio-neurotic oedema, as it is also called; may localize itself over a joint, most commonly the wrist. The intense pruritis, and the appearance of areas of oedema unrelated to a joint make the diagnosis.

Antitoxic sera when injected will occasionally produce swelling of a joint. It is well to bear this in mind. The history and early disappearance of the swelling explains its origin.

Among other conditions which need only be mentioned as requiring elimination in a differential diagnosis from rheumatism are, anterior poliomyelitis, neuritis due to plumbism, alcoholism, or arsenic, haemophilia; and new growths in or about a joint.

666 West End Ave., New York.

SURGICAL HINTS.

Digital examination of the seminal vesicles is rendered much easier if the patient's bladder is full and if he is placed in a leap-frog position.

board did not favor me with any reply, but the attorney of the board, Hon. Merrill Moores, Indianapolis, did reply and said in substance that my position was sound ethically and judicially, and therefore unassailable. The following year the printed annual report of the board furnished a list of all the licensed physicians of the State by counties, as it did the previous year, but all references to sectarian classifications were omitted, and have not reappeared in subsequent publications.

From the view of the legislator and layman, the physicians of one of the so-called schools have just as much right and license to use distinguishing prefixes before their names as do physicians belonging to other so-called schools. This is my view of the subject.

The position of the journal is not, it appears to me, conducive to unity in the profession as a whole. Differences in the medical profession constitute one of the chief obstacles to a national department of public health. I have read the "exhibits," and I am also a reader of the publications of the committee of one hundred. I am obliged to regard any publications or speeches that foster or promote these so-called school differences as hindrances to national recognition and legislation in Washington.

Very respectfully yours,

W. W. VINNEDGE.

August 30th, 1910, Lafayette, Indiana.

(In the editorial referred to no recommendation was made for the use of any prefix whatsoever. The term "regular" was simply suggested as a classification for physicians who were opposed to sectarian medicine—this and nothing more.

EDITOR.)

ETIOLOGY AND DIAGNOSIS.

Innocently Acquired Syphilis.¹—The following deductions are offered by Brouner: (1) That syphilis, one of the most contagious infections afflicting mankind, is undoubtedly on the increase as judged by hospital and private practice.

¹Walter B. Brouner, M. D., *New York Med. Jour.*, Aug. 13, 1910.

(2) That there is woeful ignorance on the part of the public both as regards its origin, its frequency, and its communicability. (3) That many estimable, respectable people acquire this disease innocently and for a long time are unaware of the real nature of their illness. (4) That these innocent victims innocently infect others. (5) That the most frequent source of infection is by using public drinking cups, public towels in bathrooms, and improperly washed cooking utensils, etc. (6) That the use of the common communion cup in public worship should rapidly be done away with and individual communion cups substituted therefor. (7) That the practice of passing around drinking water in public places of amusement should be prohibited by local boards of health, because of the danger of infection that lurks in these drinking cups. (8) That hospitals, dispensaries, and public buildings should not be provided with public drinking cups, but that individual paper cups should be provided. (9) That the public should be instructed as to what to demand from their dentists in the way of aseptic instruments. It is, alas! too common a practice for dentists not to pay any attention to the advances made in our knowledge of asepsis. (10) That medical men should ever be on the alert to diagnose lues, or syphilis, when present, ever mindful that it is a disease common alike to the prince and the pauper.

The Results of Tonsil Infection.¹—

Todd concludes his very interesting paper as follows:

1. Pain and soreness in the neck in the region of the tonsils usually arise from diseased tonsils.

2. Neuralgias in the region of the tonsil, ear, side of head, neck, nose, teeth, gums, or antrum of Highmore, may be and frequently are caused by diseased tonsils.

3. Disturbances of function through pressure on or inflammation of nerves may manifest itself in hoarseness, in loss of voice, cough, difficult deglutition, or entrance of food into trachea, with regurgitation, or in defects in hearing, dyspepsia and disturbed heart action.

¹Frank C. Todd, M. D., *Minneapolis, J. A. M. A.*, Aug. 27, 1910.

4. Such diseased tonsils may not be and usually are not large or acutely inflamed. They must be carefully examined by the surgeon who should pull them into view with a dull hook, determine whether the crypts contain detritus, whether the tonsils are sore to such manipulation, bleed easily, or otherwise give evidence of being diseased.

5. Such tonsils should be carefully and completely removed.

6. Relief of secondary infections usually follows immediately on removal, but, sometimes, only slowly, if neuritis or secondary glandular involvement is present.

7. In certain cases paralysis may be permanent.

Ten Years' Experience in Abdominal Surgery.¹—Thiemann reviews the experiences at the surgical clinic at Jena in charge of Riedel, and emphasizes the following points:

Swallowed foreign bodies very rarely cause ileus. If the foreign body has passed through the esophagus it generally slides along through the bowel without causing obstruction: the great danger is perforation, and when this occurs it is generally in the descending part of the duodenum. Characteristic for perforation by a foreign body is a peculiar tough induration of the vicinity, which may secondarily interfere with the permeability of the bowel.

Cancer of the duodenum causes comparatively slight local symptoms in comparison with the general cachexia.

The favorable influence of a simple laparotomy on tuberculous peritonitis is confirmed by the experiences related.

The success of operations for correcting atresia of the rectum is often compromised by malformations elsewhere.

In 36 of the 321 cases of incarcerated hernia the trouble was an acute partial enterocoele; the disturbances are so slight while there is so much danger of perforation even with cautious reduction that the mortality is unusually high, 44 per cent. It occurs almost exclusively with femoral hernia, but 3 out of 4 cases of obturator hernia were partial enterocoeles.

The symptoms with torsion of the appendices epiploicae were extraordinarily severe.

The best measures to sustain the patient after operations are rectal saline infusion and systematic lavage of stomach and bowel.

Physostigmin generally fails, and saline-suprarenal extract infusion has only transient effect in peritonitis.

Perforation of a typhoid ulcer is inevitably fatal unless the process becomes walled off by adhesions.

In little girls, the peritonitis set up by diplococci, staphylococci or streptococci has a grave prognosis, contrary to that of gonococcus peritonitis. In 13 cases of this kind, only 2 of the patients were saved. In one case a right crucial incision showed the whole abdomen full of pus, the appendix being apparently normal and the tubes inflamed. After wiping out the abdomen it was completely sutured and the girl, aged 13, recovered after a few days of fever. Infection is by way of the genital tract and it may occur without lesions in the latter.

Symptoms suggesting ileus may develop after pneumonia, pleurisy and pericarditis, but the abdominal findings are negative. An important differential sign in such cases is the good aspect of the tongue.

Chloroform general anesthesia does not seem to affect the course of pneumonia unfavorably.

With acute dilatation of the stomach resisting all other measures, gastroenterostomy is justified.

Postoperative paralysis and dilatation are most effectively combated by early systematic lavage of the stomach.

Saline rectal infusion seems to be the most effectual means to prevent postoperative adhesions but the adhesions developed by the suppurative process are not influenced by it.

All stumps should be covered with peritoneum, and before removing a high rectal cancer, the peritoneum should be shut off above through a left crucial incision.

Indications for Removal of the Middle Turbinate.¹—In an interesting paper An-

¹H. Thiemann, M. D., *Archiv. f. klin. Chir.*, Berlin, XCII, No. 3, pp. 597-912.

¹A. H. Andrews, M. D., *Penn. Med. Jour.*, Sept., 1910.

draws says that among the commoner diseased conditions which are generally recognized as calling for removal of the turbinate are the following:

1. Polypi springing from or recurring in the immediate neighborhood of the turbinate.

2. Chronic disease of any of the anterior group of accessory cavities especially when the turbinate itself is diseased or when it lies so close to the lateral wall as to interfere with drainage, ventilation or with examination of these cavities.

3. Disease of the sphenoid sinus or posterior ethmoid cells when it may be necessary to remove the middle turbinate in order to facilitate the treatment of these cavities.

Among the conditions regarding the treatment of which there is considerable difference of opinion may be mentioned:

1. Pressure between the middle turbinate and some of the surrounding structures especially when associated with headache or pain in the eyes not otherwise accounted for.

2. A persistently red and inflamed or hypertrophied turbinate especially when the other parts of the nasal cavity appear normal. This condition is frequently associated with the same class of head and eye symptoms.

3. A large and inflamed turbinate, probably of the bullous variety, without reflex symptoms.

4. The persistent appearance of a purulent or mucopurulent discharge under the turbinate the source of which cannot be located.

5. When the turbinate is pressed upon by a small circumscribed deflection of the septum with plenty of room below for the passage of air.

6. A sensation of nasal obstruction when there is plenty of breathing space below but the middle turbinate occludes the upper air passage.

7. Atrophic rhinitis affecting the lower part of the nose with an enlarged and inflamed middle turbinate.

Appendicitis in Children.¹—Wood concludes his practical paper with the following deductions:

1. That the occurrence of appendicitis in children is much more frequent than it is generally supposed to be. Selter found that appendicitis was seven times more frequent before the age of fifteen than it was from fifteen to thirty.

2. A large percentage of cases that occur are not diagnosticated.

3. A large percentage of cases are diagnosticated too late for successful treatment.

4. That the current literature of appendicitis should be revised and those features of the disease, peculiar to children, should be clearly set forth and strongly emphasized.

5. Our "diagnostic sense" should be awakened and trained to recognize the earliest, the initial symptoms of the disease.

6. Physicians and surgeons should be made to realize that an early diagnosis is imperative in the case of children.

7. That the diagnosis should be followed, immediately, by operation.

The Early Recognition of Uterine Cancer.¹—McCann summarizes his valuable paper and draws attention to irregular bleeding of any description, even if there be only traces; bleeding post coitum; watery blood-tinged discharge; in the early stages almost complete absence of pain.

The majority of the cases occurring between the fortieth and fiftieth years, the symptoms are regarded by the patient and her friends as due to "change of life." The medical attendant should guard against this assumption until he has proved that cancer does not exist.

Bleeding, however slight, occurring after the menopause should give rise to the suspicion that cancer is present.

If a patient with any of the above symptoms comes for advice, a careful bi-manual examination of the pelvic contents must be made before any treatment is recommended. An examination should be made even if bleeding exists, as much valuable time may be lost by postponement until the hæmorrhage has ceased.

When examining note carefully the condition of the vaginal portion of the cervix,

¹I. Wood, M. D., *Canada Lancet*, July, 1910.

¹Frederick McCann, M. D., F. R. C. S., London, *The Practitioner*, Sept., 1910.

and the cervix proper, and remember that three-fourths of all uterine cancer takes origin in these positions. Remember that there are high-lying cervical cancers and cancers of the body of the uterus whose detection is only possible by the use of the curette or, exceptionally, by digital exploration.

The microscope plays an important role in the diagnosis of early cases and in doubtful and suspicious cases.

If there be a suspicious hard nodule or erosion or ulcer on the external os uteri, a piece the size of a pea or bean with a boundary of healthy tissue should be excised.

If the portio vaginalis be intact and there is uterine bleeding, sufficient material for examination may be obtained by using a curette or sharp spoon.

The pieces should be sent to an expert for report. If the report is favorable the patient will be reassured; if unfavorable, immediate operation is imperative.

Early cancer can be cured by operation. Never treat cancerous ulcers with caustic; their appearance becomes masked and valuable time is lost. It is an error to wait and observe in order to arrive at a diagnosis. In doubtful cases a diagnosis must, and can be, made in a few days.

Finally. (1) Attend to all symptoms suspicious of cancer and instruct the patients on the importance of these. (2) Examine all cases of bleeding or abnormal discharge. (3) Diagnose manually or with the aid of the microscope. (4) Operate immediately the diagnosis is established if the disease is not too far advanced.

TREATMENT.

Meningitis and its Anticipation.¹—

In the slighter cases of fracture of the base of the skull, and some irritation from the laceration of the meninges, it is well always to bear in mind that these patients are apt to develop meningitis within 48 hours after the injury, and it ought to be anticipated. The way to do it is to clear the bowels out, and, in the second place, to put an ice-bag on the head to ensure

quiet, and, further, to insist upon absolute starvation diet. Mistakes are often made in these cases by not looking carefully after the attendants. Nurses, with the best intentions, sometimes force nourishment on such patients, but judicious starvation of a brain case is really one of the most important elements in the treatment. By starvation diet is meant milk and water, and nothing else, for the first 48 hours or so, and then, perhaps, a little bread and butter, and subsequently, very gradually and very slowly, an increase in the diet. The medical man must be guided by the temperature and the general symptoms before he lets the patient take anything really solid in the way of nutriment.

The Treatment of Migraine.¹—The following prescriptions are recommended by Rankin: (a) chlorid of ammonium, 15 gr.; phenacetin, 10 gr.; codein, 1-3 gr. (to be dispensed either in the form of a powder or of two cachets); (b) antipyrin, 10 gr.; salicylate of soda, 10 gr.; tincture of gelsemium, mxv.; spirits of chloroform, mxx.; water to one ounce; (c) heroin, 1-12 gr.; dilute hydrobromic acid mxxx; citrate of caffein, 5 gr.; compound tincture of cardamom, mxx; chloroform water to one ounce. In the case of all of them directions should be given for a dose to be taken every two hours for three doses; and every four hours thereafter until the pain is relieved. In women when the migrainous attacks recur only at the menstrual times, the use, for a week before each period, of a mixture of chloral hydrate, 10 gr., and bromid of sodium, 20 gr., given 3 times a day, is often successful, he states, in suppressing the attack or in diminishing its severity. When the temporal artery on the affected temple is prominent and throbbing, steady pressure over it may succeed in affording temporary relief.

The Treatment of Convulsions.²—The child is placed upon a table or upon some one's lap in such a manner that a number of measures can be simultaneously carried

¹G. Rankin, M. D., *Clinical Journal*, July 27, 1910.

²C. H. Chapin, M. D., *Leucocyte*, April 15, 1910.

¹The London Practitioner, London, Sept., 1910.

out. Some cracked ice is called for, placed in a handkerchief or other thin material, and spread over the occiput and vertex in such a manner as rapidly to cool the brain. If ice is not available, cold compresses wrung out of water at the lowest temperature that can be procured may be employed. The feet and legs are at the same time plunged in a pail containing hot water to which one or two tablespoonfuls of mustard has been added. Caution must here be exercised, as in the confusion the water may be too hot. The writer has obtained practically the same results by the use of this partial bath as by complete submersion, and a simultaneous use of other measures is thus made possible. The bowel is at once washed out, using any available apparatus. In a large number of cases this is followed by the expulsion of undigested masses, and the convulsion ceases. The two drugs which the author has found most serviceable are the bromides and chloral hydrate. Young infants are very tolerant of the drug, and from 3 to 5 grains may be given at once and given every ten minutes, care being taken that the solution is actually swallowed. To be sure of this last point, it is well to depress the tongue with a spoon when the remedy is given so that the fluid may reach the pharyngeal muscles and thus be carried to the stomach. If the convulsions do not cease, the use of chloral hydrate will be found more powerful. From 3 to 5 grains dissolved in half an ounce of water is passed into the rectum, and retained there until absorption. For intractable cases a few whiffs of chloroform may be employed from time to time to check the excessive severity of the convulsion.

Vaccine Therapy in its Relation to Surgery.¹—The general indication for the employment of vaccine therapy is chronic or subacute infection with good resistance, the dosage to be regulated by the severity of the infection and the known virulence of the organism and its toxins.

To recapitulate: Specific vaccine treatment in our hands has not proved of bene-

fit in the later stages of streptococcic septicæmia.

Staphylococcic septicæmia has been treated with most favorable results in all stages.

Septic intoxications without demonstrated blood invasion in a majority of the cases display general and local improvement under the use of vaccines if given early; the later the treatment the less certain and satisfactory the result.

Localized and persistent suppurating conditions are sometimes markedly benefited by vaccines.

Surgical procedures for the relief of infectious conditions should be reinforced by vaccine treatment, which should be begun as early as is consistent with the case, and preferably by autogenous organisms.

No hospital can be considered fully equipped which is not prepared to supply this form of treatment in conjunction with established measures.

GENERAL TOPICS.

The Blazek Twins.—AMERICAN MEDICINE is fortunate in being able to secure for its readers the first picture that has reached this country showing the Blazek twins, their (or her?) baby and the father of the child. Unquestionably no case has aroused the medical, anatomical, and medico-legal interest that this one has, and it has no duplicate in all history. Examination shows that these twins are two distinct persons, who are united at the iliac bone in a most singular way. They come together at the buttocks and have a single rectum and a common vaginal opening. All of the other organs are duplicated.

The twins who are 36 years old, went recently to the clinic at Prague, one of the sisters complaining of colicky pains and fearing recurrence of gall stones, for which she had undergone an operation a few years previously. On examination she was found to be far advanced in pregnancy. With the same old protestations of innocence that erring females have been making since earliest times, the sisters denied most strenuously all possibility of being in such a condition, and it was not until one of them was delivered of a lusty baby

¹Drs. J. B. Deaver, J. C. DaCosta and A. Pfeiffer, *Surg. Gynecology and Obstets.*, Aug., 1910.

boy that either would confess. With such indisputable evidence confronting them, the truth was admitted and the lucky sire was found to be the manager who has been looking after the interests of the girls for several years.

Labor was uneventful, and the pain aside from that incident to vaginal stretching was

child is normal and free from deformity. The whole affair constitutes one of the strangest in the annals of mankind. Aside from the problems of biology and physiology there are certain medico-legal questions. Can the father of the child legitimize his offspring? Can he marry one of the sisters? If so, what is the status of the other?



suffered by the mother exclusively. Lactation was established promptly and strange to say was as profuse in the unimpregnated sister as in the one who bore the child. As stated in last month's issue this was thought to be due to some internal secretion developed coincidentally with the progress of pregnancy, and which, owing to the circulatory interchange was able to find its way into the blood stream of the unimpregnated sister, with the result recorded.

As will be observed from the picture the

Can she marry? If so, and both husbands exercise their marital rights, how can the paternity of future offspring be determined?

The problem in bio-dynamics presented by two distinct though united females with two uteri, one vagina, and two husbands offers difficulties in—shall we say its happy solution?—compared to which those of the fourth dimension or squaring the circle seem as simple as child's play.

Cost of Maintaining a Tuberculosis Sanatorium.—In a preliminary bulletin on the cost of maintaining a tuberculosis sanatorium, the National Association for the Study and Prevention of Tuberculosis announces that the average cost per patient, per day in thirty semi-charitable sanatoria scattered in all parts of the United States is \$1.669. These institutions represent an annual expenditure of over \$1,300,000 and over 815,000 days of treatment given each year. The bulletin which is part of an extensive study the National Association is making for its bureau of information, points out how the country could save annually at least \$150,000,000, if the indigent consumptives were properly segregated.

It was found that the food cost in most institutions represented one-third of the annual expenditures. The average daily food cost per patient was \$0.544. The expenditures for salaries and wages represented nearly another third, being \$0.481 per day per patient out of a total of \$1.669. The fuel, oil and light cost was \$0.206 per capita per diem or about one-eighth of the total cost.

The daily cost in the several institutions ranged all the way from \$0.946 per patient to \$2.555. In the far West and Southwest, as in Colorado and New Mexico and California the cost was higher than in the East, in New York and New England, being \$2.025 per patient as against \$1.748.

The total expenditures of the thirty institutions were \$1,363,953.28, while the total receipts from all sources were \$1,548,525.74. More than seventy per cent of the receipts were received from public funds and private benefactions, only 28.8 per cent. being from patients. Stated in another way, only thirty-five per cent. of the total expenditures were received from patients, the remainder being made up from other sources.

Computing that there are in the United States at least 300,000 indigent consumptives who should be cared for in charitable or semi-charitable sanatoria and hospitals, the National Association estimates that the annual cost to the country for the treatment of these persons would be \$50,000,000 at the rate of \$1.669 per day per patient.

At the lowest possible estimate, the country loses \$200,000,000 a year from the incapacity of these indigent victims of tuberculosis. This would mean a net saving of \$150,000,000 a year to the United States if all cases who are too poor to afford proper treatment in expensive sanatoria were cared for at the expense of the municipality, county or state. And this annual gain does not include the enormous saving that would accrue from the lessened infection due to the segregation of the dangerous consumptives in institutions.

Infantile Paralysis.—The August issue of *Pediatrics* is a special edition of 100 pages devoted exclusively to the study of Acute Poliomyelitis. "The Pathology of Acute Poliomyelitis" is written by I. Strauss, A. M., M. D., of New York City. "Experimental Poliomyelitis" is from the pen of Simon Flexner, M. D., New York City. "A Small Epidemic of 17 Cases of Acute Poliomyelitis" from John Milton Armstrong, M. D., St. Paul, Minn. "Additional Observations on Acute Poliomyelitis" by F. E. Coulter, M. D., Omaha, Nebraska. "A Contribution to the Study of Acute Poliomyelitis, Based on the Observation of Thirty-eight Recent Cases" is from Colin K. Russel, M. D., F. R. C. P., Montreal, Can. "A Plea for the 'Abolition' of the Term 'Infantile Paralysis' as a Synonym for 'Acute Poliomyelitis'" is contributed by Geo. P. Shidler, A. B., York, Nebraska. "Acute Poliomyelitis" by J. S. Fowler, M. D., F. R. C. P., Edinburgh. "Report of an Epidemic of Two Hundred and Seventy-nine Cases of Acute Poliomyelitis" is written by C. A. Anderson, M. D., St. Louis, Nebraska.

The discussions before the conjoined meeting of the American Orthopedic and Pediatric Societies bearing on this subject are included.

The retrospect of current pediatric literature in this number contains the digest of the latest teachings of the world's greatest authorities and writers on the subject of Poliomyelitis, during the past year, and the whole issue makes one of the most valuable compilations on the subject ever presented.

American Medicine

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Medical Education in the United States and Canada is the subject of an extended report by Abraham Flexner to the Carnegie Foundation for the Advancement of Teaching, and as we had occasion to state last month, though in general it presents nothing which has not been discussed for many years, it lays bare many sore spots most effectively because of the great mass of data. There is an unfortunate pessimistic tone to the whole report as well as all other discussions of the problem, whereas the facts should give rise to great hopefulness. It must be remembered that a century and a half ago medicine was a trade learned by an individual apprenticeship, and that teaching in classes was very slowly developed as a supplement. The severe things said about the schools which give no practical training, show that it would not be a bad plan to return to the apprenticeship system in part at least. What a grand thing it would be if every graduate could spend a year or two as the paid assistant of a practitioner of ability! We try to walk before we have learned to stand. The large classes due to the abandonment of apprenticeships have been largely responsible for that dreadful over-crowding which we have so frequently mentioned and which forms so great a part of Flexner's report. If all the graduates were competent the public would be the gainer but the point is that too many

are not properly trained and entirely too many are lacking in intelligence—men who should be behind the plow where they were born. The plea that the poor colleges are for poverty stricken men somehow assumes that poverty is an indication of intelligence, whereas it often, if not generally, means inherited inefficiency. It may sound brutal to say that we should give no consideration to the boy who is poor though ambitious, but if he has a real back bone supporting his alleged brain, he will find ways and means.

The third profession between that of physician and pharmacist as it has grown up here and there in Europe has not even been mentioned by Flexner. Experience shows that the ideal of an academic degree prior to the medical course, is hopelessly out of reach of the vast majority of students, and the compromise of two years in college is not sufficient for the highest and best training, while the present accepted high school course of preparation is generally recognized as a mere temporary measure. Hence in those countries where medical training is far advanced, the people do not have sufficient doctors and never dream of calling on one for the minor ills which fall to the care of midwives and pharmacists. Our fault has been the giving of degrees to men who should be limited to very narrow bounds of activity, and who abroad would not be

allowed license for any kind of work. In spite of overcrowding, laymen the world over insist upon a third profession, so that "counter-prescribing" by reason of its illegitimacy has become an enormous evil and is also an agency for the sale of worthless or dangerous quack "remedies." Some people always will consult the drug clerk and he always will sell them something. Moreover it is doubtful whether the public will tolerate a law prohibiting them buying what non-poisonous medicines they please. As the custom is worldwide and ineradicable, why not control it at once? A dangerous dragon which cannot be killed had better be fenced in and tamed to usefulness instead of pretending it does not exist.

The decay of medical sectarianism is the bright spot in Flexner's report. There is only one science and art of medicine, and though it is perfectly natural for differences of opinion to arise, they invariably disappear with increase of knowledge. What concerns us now, is the repeated revelation of the awful condition of most of the sectarian schools still surviving—long known facts, by-the-way. They will all die in time, as a matter of course, but it does seem that euthanasia might be practiced on them all—and the sooner the better, for they are not dying quick enough and their struggle for existence is too painful. There is really very little public demand for them.

Medical examining boards are coming in for a great deal of discussion now-a-days, and it is natural that Flexner should investigate them a little. Though they seem outside of his theme, they are strictly part of the topic, for they become necessary because the possession of a diploma was long

ago recognized as no proof of ability to practice. The American Medical Association is taking active steps towards securing uniform legislation in all the States, and we already see evidence of the dawn of a better day. The first medical practice law was passed in New York in 1760, and yet after all this time, examining boards still confine themselves to testing the applicant's memory, with the result that good students of poor schools make fine records even though so utterly devoid of practical training as to be unfit to practice. This is being remedied, but rather slowly. Perhaps in time a diploma will be evidence of fitness, and the boards will disappear as no longer of use, but in the long meantime there must be better examinations and better examiners. The opinion seems to be pretty general that the boards should be separate from boards of health, members being selected by the Governor from nominations by the State Medical Society, that teachers should be ineligible, sectarianism recognized, graduation from a medical college be a requirement for applicants and that materia medica and therapeutics as well as practical and clinical work be included in the examination. The board must have power to determine the standing of colleges, revoke or suspend licenses of practitioners for misconduct and penalize certain actions. These are the main conclusions of the recent conference of the Council on Medical Education and the Legislative Council, and will no doubt be widely accepted, though there is a growing idea that it is safe to omit therapeutics if the candidate is learned in everything else.

Licenses for special practice are being advocated more and more, and the matter

must eventually be taken up by examining boards though this is the time for discussion. It is now generally recognized that in major surgery and such specialties as ophthalmology, much training and experience are necessary before it is safe to permit one to practice. Here too, the post-graduate schools which were established to give the instruction and practice, cannot be trusted, for many of them are known to be deplorably inefficient, so bad indeed that a few should be disbanded as doing more harm than good. It does seem that as in the case of dentists, a special license will be required before any man be permitted to indulge in such specialties as surgery, ophthalmology and otology. In like manner there is a growing opinion that every kind of limited practice should be controlled by a license after examination following proper training—midwifery, massage, refraction, etc. Indeed, it is thought by some that even the cults like osteopathy and Christian Science should be recognized and licensed. It surely would destroy all fads if the practitioners were required to be so highly trained as to be able to make a correct diagnosis.

The need of a definition of the practice of medicine is becoming more and more acute, but unfortunately no two States seem to agree. The foolish jurist, who decided that none practiced unless they prescribed drugs, opened the eyes of the medical profession and of the laity, to the danger to public health from the bench itself. There is a unanimous demand for a definition which can be adopted in each State as a part of the medical laws for the purpose of excluding the unqualified. A committee of the American Medical Association has suggested the following: "A person prac-

tices medicine and surgery within the meaning of this act, who holds himself or herself out as being able to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity, physical or abnormal mental condition and who shall either offer or undertake by any means or methods to diagnose, treat, operate or prescribe for any human disease, pain, injury, deformity, abnormal mental or physical condition." This definition is certainly far shorter than any of those devised by lawyers to cover all special cases which now escape punishment for misconduct, but it does seem that though there was a unanimous objection to including definitions of limited practice or licensing such people after examination, it would be wiser to follow the general trend of placing everyone under control no matter how little he does,—even the chiroprodists and barbers.

Reciprocity has been growing at such a rate that fully 90 per cent. of the States now provide for it in some form, and it is safe to predict that it will soon be universal. The refusal to reciprocate was due to the fact that, here and there, licensing boards fixed too low a standard of examination or merely accepted a diploma. The result has been a general rise of standards all over the country, but as there is still considerable room for improvement, it is not safe to let down the bars at once. There is a very widespread opinion that each individual applicant's qualifications should be left to the examining board to determine as they think best, and that they need not resort to an actual oral or written examination unless the applicant's credentials do not conclusively show him to be qualified. Where the board is required by

law to give a rigid examination to each candidate, the decision is left to their discretion in the end and why not trust that discretion to determine the matter in other ways? The very fact that a physician, whose health compels a change, has been in successful practice and in good standing for a certain number of years, certainly entitles him to a license anywhere else, no matter how or where he got his original education and license. The elderly practitioner, general or special cannot indeed pass an examination which would be child's play to a recent graduate.

A board should keep tab on colleges and then accept diplomas from the best in lieu of examination if they think proper, and it also seems that it must keep in touch with the doings of all other boards with a view of accepting the findings of those who have a proper standard. This requires a permanent secretary and staff, for the work is arduous; but it must be kept up forever as a check on back-sliding which is always liable to occur and is already in evidence here and there. So it does seem that complete reciprocity is an unattainable ideal, and that there will always be some applicants who must be examined, but they will be mostly if not entirely recent graduates from low grade schools, for we cannot expect all the poor colleges to die.

Governmental study of fish cancer now seems assured, but it is a rather sad commentary upon our neglect of human diseases that no action was taken until there was evidence that fish culture was being injured, and trout, at that, whose existence is mostly for sport. It is openly stated in the request for funds that perhaps an investigation into the cancer which is lessening man's sport may incidentally

throw light on the form which is lessening his life. We hope the time will come when the general government will establish huge laboratories for the study of man himself, but there does not seem to be any prospect of an early accomplishment of this desirable state. Pigs and fish come first now, in the eyes of all governments. How much nobler it would have sounded to have asked for funds to study human cancer, which study might incidentally show how to preserve the trout.

Denials of any modern increase of cancer are being made by those who are competent to judge, both here and in Europe, and it is a timely warning against the popular terror which has been created by the mass of lay literature on the subject. There is no doubt that more cases are reported since we learned how to recognize them, so that the statistic increase does not necessarily mean an actual increase. Again, there are more people who survive early diseases and reach the "cancer age," so that there should be an actual relative increase of number of cases, but that is far from saying that a person in the cancer age is any more liable to contract that disease than were those who lived fifty years ago. Taking into consideration all the available data, it has been decided by those who have looked into the matter exhaustively, that the proportion of the population of cancer age, who contract malignant disease, is the same as it always has been. A few thousand years ago, when our fighting ancestors rarely reached 45 years of age, or even 35, there were mighty few cases of cancer, but the proportion was probably the same as now. Thus vanishes another of the bugaboos due to improper study of modern medical statistics. If we do not put a stop to all

this nonsense about the increased dangers of living, we are liable to find people worrying about the certainty that they will die of old age. Of course we will lessen the mortality from cancer in time, but the trend of medicine is to increase the diseases of old age.

The defective development of school children is appalling—enlarged tonsils, adenoids, defective sight, hearing and breathing, small bones, rickets, shreddy muscles, defective teeth and many other things are reported in such a large number of cases as to give considerable alarm, though, as we have often remarked, the percentage of cases is probably less than among the city poor of a century ago or even fifty years ago. The huge numbers startle us. And it is all basically due to insufficient food—with bad ventilation and other sanitary faults as secondary but effective causes. It is now said that 35 per cent are underfed in New York City, some go to school without any food at all and are weak with hunger—and the school-law causes it—that is, if we accord to every man the right to multiply like a rabbit whether he can feed his babies or not. These weaklings are furnishing a host of cases of infection later, and are such a menace to the well-to-do that the latter must take steps in self-defense. We must do something—either let the little things leave school and go to work to earn bread and milk which their fathers cannot buy for them, or we must feed them ourselves and incidentally make laws declaring a man a criminal who produces babies beyond his feeding power. Public health is at stake. What shall we do?

Free meals for poor school children seem to be growing in favor in spite of the serious objections to such a step towards socialism, and yet it appears to be the only thing to do if we are to continue our present policy of preventing the little starvelings from working. The poor man has never been able to earn enough to feed his own offspring and claims that, if the children are compelled to go to school instead of helping support the family in the manner they have done ever since there have been "poor-folks," then food must be supplied. We must remember that our colonial ancestors could not permit their children to go to school more than a few weeks, and then only when there was a lull in the farm work. If the law had compelled school attendance the year round, the farm work would have suffered and there would soon have been hunger. Boys were a necessity and are still so. We must realize that it is not work which injures these city children, but *unwholesome* work, and Heaven knows there is a superabundance of that kind, in the slums. Medical Science cannot support the laws against child-labor itself;—on the contrary, there is a lot of evidence that children working moderately at wholesome things, as on the farm, are the better for it. Many of the nation's leaders were child laborers, perhaps because of it. The pampered brat is often a weakling in adult life. Unless we revoke the school-law or the child-labor law, ordinary humanity compels us to feed the poor school children now deprived of food by these laws. Which shall it be?

Is universal education really a national necessity? The question is not outside of the sphere of medicine, but in the middle of it. Anatomy and psychology have already

proved that quite a percentage of the poor are not possessed of sufficient intelligence to comprehend more than the three elementaries,—reading, writing and arithmetic,—and mighty little of them. The types are the hewers of wood and drawers of water, who never use even these elements. If we can only make up our minds that it is a waste of time and money to try to educate them, then perhaps it will be possible to let them go to work. We must realize that even unwholesome work of the well fed may not be as injurious as the present starving idleness. A healthy well fed but densely ignorant workman is a better national asset than the educated defectives now seen. We hear less and less of the foolish assertions of pedagogs that education improves citizenship and morals, now that our rottenest, in and out of prison, are fairly well educated, some excellently trained. So perhaps we had better ease up a bit on compulsory education first, then on the child labor laws, and then—get after the human rabbits.

Restrictions on marriage exist in all civilized countries, though to vastly different degree, so it is not at all revolutionary to advocate still further restriction. Nearly a century ago Wurtemberg made it "illegal for any young man to marry before he was twenty-five, or any young woman before she was eighteen; and a young man, at whatever age he wishes to marry, must show to the police and the priest of the commune where he resides, that he is able and has the prospect, to provide for a wife and family." We have not heard that this proved impractical and we are quite certain that the press has never chronicled such distress as that of New York or London, where a man mar-

ries regardless of his earning power. Wurtemberg also had compulsory education for all from 6 to 14 years of age, and the law thus insured that parents could support the children at least for fourteen years. Why not do this in New York, though as a matter of fact we see no physical or medical reason why the children should not do something wholesome before they are fourteen. As before said it might even do them good, as we see on the farm. What we are after is a check on the brute who cannot support his children at all, and who knew it before they were born. Let the charity workers do a bit of thinking on these lines instead of putting a halo on the rascal, and pretending he is a victim of modern industrialism. Why not forbid marriage to anyone whose income is less than \$500?

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The white slave problem is so far removed from the lives of all respectable people, that, according to common belief, its study and possible solution are matters which can only concern the police—for obvious reasons—or those who are engaged in mission or philanthropic work and whose labors bring them more or less closely in contact with this as well as other forms of human depravity. In other words, the attitude of the average American toward this essentially revolting question is one of indifference, an attitude toward every question not immediately affecting one's personal interests that is becoming almost a national characteristic. It is not a pleasant nor commendable thing to do, this reflecting on the selfishness of one's countrymen, but it is a fact nevertheless that not only one but many serious evils are to-day gnawing away at the vitals of American society solely because the

average American citizen will not consider nor attempt to correct any evil unless it actually touches his home, his pocketbook or interferes with his own personal progress. When it suddenly appears that any evil does take on a personal relation and jeopardizes ever so little the sanctity of his home or the welfare and happiness of himself or any member of his family, then Mr. American Citizen becomes a whole army in himself. With intelligence, force and the true fighting spirit he tackles the proposition in hand. If the conditions warrant, all the advantages of effective organization are brought into play, and it does not take long to bring the particular evil that has occasioned such activity, well under control and pave the way for its complete conquest. It is to be regretted that the widespread dangers of the popularly termed "white slave" evil have not as yet been recognized. Strange and improbable as it may seem, it offers a menace to every home in which there are young girls approaching womanhood. Anyone who doubts the gravity of the problem or who wonders how the vice and depravity of the underworld can endanger the girls of our cultured homes should read the splendid article by General Theodore A. Bingham on "The Girl who Disappears." (*The Metropolitan Magazine*, Nov. 1910).

False prudery offers another reason for the unfortunate apathy of the better classes of people toward the social evil in its various phases. As a consequence our boys and girls have all too often obtained their education concerning sex and sexual matters under the worst possible conditions. For a long time, the medical men of the country have been urging that parents and school teachers give more thoughtful attention to the proper education of boys and

girls in the significance of sex. It is robbing the subject of its secrecy and mysticism that promises greatest protection against the essential dangers that attend the awakening of every boy or girl to his or her sexual nature. Ignorance spells disaster and disease, as every physician knows only too well. If the experiences of every practitioner could be told, tales would be unfolded of little girls betrayed, of little boys infected with loathsome disease, that would astound the mothers and fathers of the land. Not *my* son, nor *my* daughter, they say, but unless they have taken steps to give their boy or their girl accurate knowledge of their bodies, why should they feel that ignorance and innocence are any less apt to prove disastrous to the moral welfare of their offspring than to those of other people? No, it makes no difference how high in the walks of life a family may be, its daughters are no safer from immoral contamination, if kept in ignorance of sexual matters, than the girl in humbler station. There are human vultures who are constantly seeking ignorance in the young female, wherever she may be found. They are no respecters of family, social position or wealth. A victim susceptible to their attacks is all they seek and it matters not how rich or poor, or how well bred or lowly she may be, she only counts one more to the bag. Physicians know how often the girls of the better classes go astray, solely because of the ignorance that is too often their lot.

Does it not seem time to attack the social evil with real intelligence and force? No mother and father can remain indifferent, for the sake of their own boys and girls. No physician can remain indifferent, for perhaps more than all other men, he and his colleagues realize the fearful inroads

that the social evil makes into the physical and moral fiber of its victims. Finally, no person who is normally possessed of humane instincts can ignore the situation or the urgent need of its correction. A live interest in the question is needed, first of all. False modesty or prudishness should no longer prevent the free and open discussion of the many phases of the social evil. Through intelligent discussion the actual situation will be determined and thus the way laid for the development of laws and measures that will practically cope with the presenting dangers. Through individual as well as organized effort, the officials of every large city should be actively supported in their attempts to control this as well as all other forms of vice and crime. Since common sense tells every intelligent person that prostitution and sexual depravity can never be wiped out as long as human nature remains as it is, the next best thing is effective regulation. It is true, that there are many good people who look on regulation of prostitution as simply compounding the evil, a concession to crime and depravity. But when one comes to study every effort that has ever been made to stifle the one traffic that is as old as civilization itself, the futility of such efforts at once becomes evident. Apparent success invariably consists of changing the manner and methods of the evil, its form of expression, perhaps, but never is there any lessening of the evil itself. The whole problem therefore resolves itself down to choosing the least of several necessary evils. The segregation of prostitutes, wherever it has been strictly carried out, has proven the most satisfactory of all attempts at controlling the situation, as General Bingham's article, previously mentioned, points out. Not only does it enable

the police to keep at all times a rigorous surveillance over a dangerous class and its satellites, but it enables the Health Department to exercise a definite system of prophylaxis which cannot be overestimated as a means of effectively limiting the dissemination of the "Great Black Plague." The medical profession has long seen the importance of these matters and has done its best, not only in preaching the need of properly educating our boys and girls concerning the sexual function, but also in pointing out the dangers of the social evil to the innocent. Already this work has borne good fruit and the magazines are at last doing their part to break down the barriers of false modesty and to educate intelligent people to the urgency of the question. Let not the physicians of America be content, however, with the interest they have awakened in these great problems, but gratified and encouraged by what has already been done, unite shoulder to shoulder, and through fearless cooperation with the municipal governments, protect our boys and girls from the greatest danger that can possibly threaten their minds and bodies. This, as some one may say is hardly a medical question, but today the modern physician concerns himself with every question that has to do with the welfare of humanity, and few there are who will deny the benefits that have thus accrued—and may yet accrue—to all mankind.

Announcement—The November number of AMERICAN MEDICINE will be one of the most important that has ever been issued. Several notable articles are to appear, and some announcements will be made of great interest to the thousands of AMERICAN MEDICINE readers.

MEN AND THINGS.

Is It the Man or His Alma Mater?—

While so much discussion is being stirred up by the Flexner Report on American Medical Colleges (it will be noted that we have not been able to resist the temptation to indulge in a little comment ourselves) it will be interesting to look up the college history of some of our great physicians and surgeons, and in the light of their accomplishments, read the estimation, high or otherwise, which the report in question places on their Alma Maters. For a starter, the name of Dr. Simon Flexner immediately suggested itself. Since Brother Abraham Flexner wrote or compiled the report, it was certainly interesting to learn his opinion of the school from which Brother Simon obtained his diploma. Before disclosing the data which we were able to obtain, just a word may not be out of place concerning Brother Simon.

If there is to-day a physician in America, or in fact, in any other civilized country who does not know of Dr. Simon Flexner and his work, he is hopelessly out of touch with his profession. Dr. Flexner stands to-day without doubt one of the most brilliant medical men of the present age of scientific medicine. As a laboratory worker his accomplishments have won him the sincere admiration and gratitude of his colleagues. His connection with the Rockefeller Medical Research Institute has provided splendid opportunities, which he has had the acumen and masterly ability to utilize for the benefit of all mankind. Probably there is no better exponent of the laboratory in its relation to medicine at large than Dr. Flexner. Assuredly no scientific investigator has shown

so plainly the wonderful possibilities that rest in laboratory research or has laid such substantial foundations for active cooperation between the laboratory worker and the physician at the bedside. His own particular studies of meningitis, infantile diarrhea and many other diseases have enriched medical knowledge, and led to the most gratifying advances in their practical treatment. And so it is. Dr. Simon Flexner is a man whom his associates admire, respect and love; the world at large likewise admires his attainments and appreciates the splendid work he is doing and helping others to do for humanity. We have no desire to appear fulsome or extravagant in our commendation. Our single aim is to point out his undeniable place in medicine, a place that has called for the exercise of natural as well as acquired mental attainments, and an equipment in scholastic medicine that was undeniably potentially valuable.

Whatever we have said, or may later say has been free from any intentional disrespect. Far be it from our intent, that anything in these pages should convey the slightest affront to one whom we so sincerely respect and esteem. But the situation carries such a trite and happy confirmation of our statement in last month's issue that "the world is interested in what a medical man is and can do, and not the college he graduated from," that we could not refrain from presenting the matter, even in this clumsy way.

What we have stated about Dr. Simon Flexner—facts that no one will gainsay—show conclusively, though perhaps inefficiently, his great usefulness both to his confreres in medicine and to humanity in general. Measured by his scientific stature, his contributions to medicine and his

achievements, Dr. Simon Flexner in the light of his brother's dicta concerning medical colleges and their capacities for developing useful physicians, should be a graduate of some one of the large and best equipped universities. But alas, fate ordained differently and according to the last edition of the *American Medical Directory* Dr. Simon Flexner, the saver of babies' lives, director of one of the world's most famous and important scientific institutions, a splendid scholar, one of the world's great scientists, a man who already has achieved wonders in his chosen field, and one who, if his life is spared will probably be responsible for the conquest of several of humanity's most fatal maladies, suffered the frightful handicap of equipping himself for his life's work at the University of Louisville, Medical Department, an institution one will shudder to think of in 1889 if what Brother Abraham says about it today is true. Following is his comment:

"Laboratory Facilities—Teaching laboratories are provided for chemistry, pathology, bacteriology, physiology, and pharmacy. They are inadequate in appointments and teaching force for the thorough teaching of the fundamental sciences to so large a student body.

The University of Louisville has a large, scattered plant, unequal to the strain which numbers put upon it. In the old days, Louisville, with a half-dozen "regular" schools, was a popular medical center, to which crude boys thronged from the plantations. The schools offered little beyond didactic teaching. Now, they have been arithmetically added together; the resulting school is indeed superior on the laboratory side to any of its component parts; but there are radical defects for which there is no cure in sight. The classes are unmanageably huge; the laboratories overcrowded and undermanned; clinical facilities, meager at best, broken into bits in order to be distributed among the aggregated faculty. To carry the school at all, a large attendance is necessary; but a large attend-

ance implies a low standard. The situation is thus practically deadlocked."

And this in the year 1910 is the school that in 1889 started Simon Flexner on his career!

We realize that there are other phases of the question and a single case like this offers no real opportunities for comparisons or conclusions. But we still think it carries a valuable lesson and proves our contention that after all the personal equation is the all important factor. We need all the Simon Flexners we can get, and a school that can help one such man in each decade to embark on a career so useful to his fellows and all mankind, has justified its existence, Brother Abraham notwithstanding.

Dr. Henry G. Piffard, Man, Physician and Friend.—As we each and all of us wend our way down life's toilsome road, God knows there are few indeed who ever deserve the appellation "friend," with all that it means in its true and full significance. There are more than a few, however, among those who knew and associated with Dr. Piffard, who can look back and apply the word friend in all its meaning to this man. For those for whom he cared, no bother, no effort, no inconvenience was ever too great. Everything he owned, and every ounce of his strength and vitality was constantly at their service.

This great and good man, whose recent death from pneumonia was such a shock to the scientific world, was born in Piffard, New York State, on September 10, 1842. He was graduated B. A. from the University of the City of New York in 1862, and M. D. in 1864, from the same institution. In 1874 he was appointed Professor of Diseases of the Skin in the Medical Department of the University, a position he filled for many years, and was an Emeritus Professor at the time of his death. He was one of the early

members of the New York Dermatological Society and was also a member of the American Dermatological Association.

Few physicians were more widely known throughout this country and Europe than Dr. Piffard. His contributions to dermatology and many other branches of

micro-photography was almost wizard-like in its attainment of accurate detail.

Like all scientists Dr. Piffard often buried himself in his work and objected to needless or unwarranted interruption. At such times many might complain of his abruptness and abstraction. But to those



HENRY GRANGER PIFFARD, M. D.

medicine were numerous and valuable, and he was quite generally recognized as one of the leading authorities on electro-therapeutics, especially electricity in its application to dermatologic lesions. As a microscopist of remarkable ability, Dr. Piffard had also won renown and his work in

who had a right to his time and attention Dr. Piffard was ever the soul of courtesy. Young physicians were his especial delight and nothing pleased him so much as to devote his time and effort to helping some young practitioner to solve some knotty, difficult problem.

Space precludes a more elaborate or extensive eulogy on the life of this faithful physician, true scientist and loyal friend. To say that he is missed only partially expresses the void his passing has left. There are too few of his kind, and while his loss to those who enjoyed his daily association, cannot be expressed in mere words, there is great satisfaction in having known and worked with such a man. He left not one, but many of us stronger and better, prouder of our calling and more appreciative of the opportunities it offers. No greater tribute can be given to his memory.

The death of William James, professor of philosophy at Harvard, which took place on August 26th at his summer residence at Chocorua, N. H., from heart disease, in the 69th year of his age, robs science of one of its leading exponents in this country. It is too much the fashion now-a-days to gird at "philosophy" as a nebulous imaginative study, built upon the unstable base of introspection and projected into space without any adequate prop of support. It is true that arm-chair philosophy pure and simple has been responsible for too many of the erroneous dogmata that have until recent years shackled the efforts of science to break from the shell of speculation and emerge into the daylight of demonstrable knowledge. But James was no mere arm-chair philosopher and psychologist. He had enjoyed a good practical training in the biological sciences, and where science and philosophy touch hands he demonstrated that fact by the employment of the scientific method. It is true that he did not himself do any considerable work in the experimental side of psychology, but in his

"Principles of Psychology," published now twenty years ago, he indicated the lines which modern developments of experimental psychology have perforce largely followed in the course of natural development. Among his other works that have attracted wide attention, and deservedly so, are "Varieties of Religious Experience" and the Lowell Lectures on "Pragmatism." Whatever may be the degree of agreement or disagreement that his theses shall ultimately encounter at the hands of developing science in regard to the link between the inner and the outer animal, his name will deserve honor as that of a pioneer in the pathway to light.

How to study medicine. In the October issue of the *Outlook* appears an article entitled "How to Study Medicine," by Henry S. Pritchett, president of the Carnegie Foundation. It is, of course, addressed especially to those young men who, for various reasons, are contemplating the taking up of the study of medicine, or to their parents or guardians. It is a very convincing statement of the main principles that underlie the investigations of the Foundation on which its report was founded.

Dr. Pritchett deals with the current argument that "commercial medical schools" are "to serve the poor boy," in this wise: "The fact is, that a poor boy has no right to go into the practice of medicine with any lower qualification than the rich boy. The practice of medicine is one of the great human professions which affect profoundly, not only the health, but the moral and social lives, of a community. No man has a right to go into it unless he will fit himself fairly for the work."

So far as the actual cost of the medical education itself is concerned, no sane person can cavil at this statement. The expense of acquiring a medical education, however, is not, and cannot be, confined solely to the actual school fees for tuition and medical training. There is also to be considered the cost of going and living away from home. The greater the distance from home, the greater the cost of travelling. In some places, too, suitable board, etc., can be obtained far more cheaply than in others. Again, in a college where the "poor boy" is likely to find himself associated chiefly, if not entirely, with others in circumstances like to his own, standards of living will be lower, and he will be less likely to feel a natural, even though entirely unnecessary, sense of humiliation at being unable to do as the majority of his fellow students do, to dress as they dress, to share in their amusements, and generally to comport himself as they do.

That many of these smaller proprietary, or so-called "commercial," schools do aim by "alluring advertisements" to offset the defect of inadequate facilities and opportunities for training and teaching, particularly in the highly important fundamental sciences, cannot be denied. The true solution of this problem, however, even after a most careful and sympathetic consideration of Dr. Pritchett's article, still remains, in our opinion, essentially as we stated in our editorial of last month. Dr. Pritchett himself says that "Educational opportunities in America are to-day so generous that any poor boy with the right stuff in him who desires to enter medicine can secure, not only the neces-

sary medical education, but the requisite general education."

Let the State licensing bodies ordain a reasonably high standard of general education as a pre-requisite to registration as a medical student in *any* medical school in their respective jurisdictions, ensuring its enforcement by themselves conducting the preliminary test examination for entrance, and the hopelessly inadequate medical schools will die for lack of support at the hands of an intelligent body of intending students, rich and poor alike, and the same pressure of student opinion will soon compel the surviving schools to elevate their teaching facilities to an adequate level. Most states already require an examination for a license to practice medicine, irrespective of the school at which the physician graduated. Let them carry this principle of selection a little further, by licensing also candidates for the study of medicine, and not only will the average status of licensed practitioners be raised, but many individuals, doomed from the first to the devious by-paths of charlatanry and disreputable practice, will be estopped at least from entering the medical profession to disgrace it by their methods.

Aviation, it would appear, is not yet undisputed victor in the transportation championship. The fact that no less than fifteen among the pioneers of aviation are said to have given up its further pursuit as a regular thing, in consequence for the most part of the nervous and cardiac derangements that it induces, would seem to indicate that the disadvantages of the air as a highway are too general and too far-reaching to render it after all generally

worth while. Among those who are said to have given it up more or less completely, though many of them still continue to provide machines for others to use, are Debonnet, Paulhan, Bleriot, Henry Farman, Armstrong Drexel, Fournier, Rougier, Duray, Cockburn, Gibbs, Capt. Dickson, Glenn H. Curtis, Somer, Rawlinson and Singer. If this report be true it must surely indicate that while from a mechanical viewpoint, the conquest of the air may be considered as almost achieved, the biological difficulties of it for human travelling are by no means as yet overcome, and consequently the millenium of aerial transportation as an every-day affair is hardly yet established. This, however, is surely only a setback. From the recognition of a need is evolved means for its satisfaction. So far as we are aware the dangers and difficulties of diving and the recognition of caisson disease as a regular malady due to definite conditions inherent in the practice of diving, have not lessened the supply of professional divers. Wherever there is a difficult or dangerous duty to be done, there will always be found men willing to risk their healths and even their lives in doing it. The forlorn hope itself rarely lacks for volunteers. But it is one thing to find intrepid individuals to undertake a perilous feat with a definite objective in view, as indeed the history of the growth of aviation itself shows, and quite another to induce people in general to adopt the same procedure as for every-day use.

Many years ago a "business man's train" was established in England between London and Brighton, which covered the distance between these two cities—sixty miles—in an hour, and many London business men eagerly became Brighton "commuters," travelling that route twice daily. The con-

stant wear and tear, however, soon began to cause serious effects on the nervous system and we believe the train was ultimately discontinued for lack of support. It is one thing to travel sixty miles an hour once in a way, but quite another thing to do the same thing twice daily. In like manner, the nervous troubles and cardiac affections that are assigned by the well known aviators above referred to as for the most part the cause of their falling away, will probably be enough to prevent the routine employment of flying machines as a means of transportation for some time to come, in spite of the mechanical perfection to which they are rapidly being brought.

The Public and the Medical Profession.—The public, says Isadore Dyer, in *Southern Medical Journal*, is a self-constituted critic, prejudiced against the profession and clamoring for demonstrated achievement, but it is also like a great child needing to be led into the way of cleanliness, godliness and health. With the spirit of today the public is ready for education, and we owe it to ourselves to go more than half way in the effort to instruct it. When that day comes in Utopia, when the state will care for all its sick, educate, train and keep its staff of physicians, lay restrictions of community obligation to health on all citizens, provide for the prevention of disease by instruction in schools and in the communities of peoples, as well as the means to safeguard the individual, then our labors will have ceased, but until such a dream is realized, we must continue to knock at the door of the Empire of Hygeia, begging the spiritual and economic aid of all to further our cause, always humanitarian in its purpose and conservative in its results.

ORIGINAL ARTICLES.

THE PERSONAL OR BUSINESS SIDE OF A DOCTOR'S LIFE.¹

BY

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Surgery; President American Medical
Editors' Association.

The receipt of your diploma will bring with it the realization that in the practice of medicine, there are two sides for professional success, each depending upon the other. One without its companion spells failure. The scientific or greater side is that one partner in which you have been, or are being trained by this faculty. The other is the personal side. To enable you to successfully fight the battles of life, you must, notwithstanding your scientific training, possess professional tact which commercially translated means business sense.

It is upon the personal or business side of the profession that I have been requested by your Dean to address you, and that is my only reason, outside of the pleasure of meeting you here this afternoon, for presuming to appear. The time has passed when a slick pair of horses driven rapidly through the streets by a well dressed doctor, with little or no scientific knowledge, but with a large bulk of nerve or a so-called good business head, can command success.

The first thought of a graduate is the location in which he will establish his office, and by consulting medical directories, he will conclude that upon a basis of 500

people, which is the presumed number that each doctor must have to draw upon for his practice, the field seems to be more than supplied and that no locality is waving the flag of distress for want of medical men. A careful study, however, of the number and especially the ages of physicians located in any one territory, taking their date of graduation as a basis, will shed much valuable light upon the choice of locality for beginning work.

The presence in a locality of a large number of doctors who have passed the meridian and are approaching the sunset of their lives, should not deter you from considering such a field.

As to the general location, I would paraphrase Horace Greeley and say, "Go to the country young man and grow up with its inhabitants." While it is true that the city offers some advantages, principally in the way of clinical observations, the opportunity is not there for a young man to build up a practice, and when you observe doctors with reputations acquired by years of hard work in the city, going to the country, not for their health, but driven away by the various cults and pathies, why not start right and profit by their experience?

True, they will seem to have an advantage over you, gained by years of experience, but age, proper training and ambition directed along the right lines will win out. Before locating anywhere, it is well to broaden your experience and add to the knowledge which you already possess, by a term as resident physician or a clinical assistant in some hospital. This will be a great help, particularly so if you locate in some town or village away from the clinical facilities offered in larger cities.

After you have located your office do not forget that you are a student of medicine

¹Presented by invitation at the opening sessions of the College of Physicians and Surgeons, Boston, Mass., Sept. 21, 1910.

and always will be if you wish to succeed in your chosen profession. An elaborate library at the beginning is not necessary or essential for your welfare, but a well selected list of text and reference books you will need, and they should be secured as soon as you start in practice or immediately afterwards. A prominent authority has stated, "that the more completely a text-book is revised, the more out of date it will be found." Notwithstanding this opinion, you will find that authoritative books upon medicine and surgery will be of great service for ready reference. I would advise a young practitioner to subscribe to as many well selected medical journals, American and foreign, as his finances will allow. These magazines will give him the advances made in the practice of medicine and surgery and other important facts for his daily consumption. It is through this source that all great discoveries are authentically given to the professional world. Our knowledge regarding that wonderful discovery "Ehrlich's 606" was furnished to the medical profession, first through the medical press. This one instance I mention to emphasize how necessary it is to be a careful and extensive medical magazine reader not only for new points but for old ones presented as a reminder of things useful.

Do not think that patients are gained by loitering around billiard parlors, saloons or the corner drug store. You must not forget that outside of the fact that such places will not only ruin your opportunities of gaining a professional standing, the practice of medicine is a dignified profession and first impressions, if rightly made, are a valuable asset in your effort to build up a practice.

Select your associates with care. It is well to affiliate with the church. The denomination is not so much to me as the fact that it will offer you a peace of mind and an opportunity for salvation in the world to come. Then again, the acquaintances you make through your church will be those you will not be ashamed to greet upon the street. Join a fraternal order if founded upon the right principles, not for the financial benefit you will receive per se, but for the purpose of broadening your acquaintance among men of healthy mind and the good it will do you outside of the financial side.

While dress does not make the man, it often reflects his characteristics. Neatness of appearance, not over-dress, and personal grooming denote attention to details which will be reflected to the mind of your patient or possible patient, and will convey the idea that the same care will be exercised in professional matters as in personal details, therefore do not fail to give particular attention to this point.

While it is true that whiskers upon a billy-goat do not denote brains any more than they do upon the human, nevertheless as it is a fact that youth does not seem to beget confidence in the practice of medicine, therefore until Father Time normally adorns you by his ravages, it might be well to lend to your facial appearance such decoration as nature will provide.

Do not carry a serious expression upon your face when entering the sick room. What prompted sending for you was the hope that you could relieve distress through your ability to cure. It is well to remember the words of Sir Walter Scott, "hope is brightest when it dawns from fears." By this I do not mean to convey to you that

you should tell your patients that you are going to cure them, but your manner of action and your determination will instill in them a trust in you and a confidence in your ability to relieve them of their suffering, that will speak louder than words. This should be well borne in mind because hope of relief is the all-pervading thought of the sick, and if you cannot encourage it, someone else will. It is a never-failing tonic.

There are always times for seriousness, but do not be too serious unless there is occasion for it; and by this I do not advise frivolity for that is not in keeping with the dignity of the profession.

The opportunity for the young practitioner to gain a livelihood in a professional way outside of his strict attendance upon the sick is becoming broader daily. Nearly every State has passed laws requiring the medical inspection of school children. The realization of the necessity and advantages of surrounding the minds of those who are being developed with a perfect physical structure, is working untold good and as medical inspectors of school children, you will be able to add to your income, and at the same time embrace an opportunity for extensive observations that will materially benefit you in your other professional work.

The examination of life insurance risks is another source of income that should be considered by those entering the practice of medicine. While tending to broaden your acquaintance, it will also pay you a fair remuneration for your work.

There seems to be an unwritten law that doctors should be married men. While there can be no argument on the great advantages to a physician in a fortunate marriage, the fact remains that the true man

is a safe man whether he be single or married, and until such a time as you are financially able to assume the burdens of a household, there is always the possibility of making two miserable beings where two fairly contented ones may have existed.

The statement is frequently made that the physician is a poor business man. In a way this is but too true, however he has been devoting his early life to studies to perfect him in the practice of his profession, and for that reason the opportunities of acquiring business methods have not been afforded him. Then again this assumption has taken form for the reason that the doctor neglects or is afraid to send his bill because he might offend his patient. You should bear in mind that "payment deferred maketh the patient dishonest." The doctor is entitled to his fee whether he writes a prescription or whether he advises simply upon matters of health or sanitation. "Do not depend upon a patient's gratitude for your fee. Bills that are allowed to accumulate, may become so large that it becomes a financial impossibility to pay, thus many times a man is branded as dishonest when a prompt collection of small fees would not have been a burden to him." In sending out your bills, it is always well to use a distinctively colored paper. "It acts as a constant reminder that the account is unpaid and is easy to find when wanted. Do not feel that it is always necessary for you to make a private sacrifice for a public benefit." While you will be called upon very often to offer your services to the poor and needy, and it goes without saying that you will do so willingly and with a whole heart, to look upon the physician as a philanthropist and one who is supposed to give his services gratuitously upon every oc-

casion is an injustice, and it arises only on account of the generosity of the physician himself. As a general rule it does not pay to treat your friends without a fee. Advice that is not paid for is always lightly considered and does not redound to your professional standing or the right side of the ledger.

In office work, there is but one rule and that is "cash upon delivery" and this applies quite as effectively to obstetrical work. Again referring to office practice and the handling of patients, I wish to quote the words of Dr. Cathell in his most excellent book upon "The Physician Himself." He says: "There is a difference between words used with office patients. When you desire a patient to again visit you, do not instruct him 'to return so that you can see how he is getting along,' but 'advise him to consult with you again upon a given date.' In the first instance the patient will not expect to pay for the call. In the second, he feels an obligation to do so."

After a time, I take it that, having followed the business methods herein suggested, you will have accumulated sufficient of the world's goods, represented by cash, to think of investments. In this respect, just one point, invest in local securities where you have a fair opportunity of judging their value. Ninety-nine out of 100 mining propositions and other million-a-minute money makers are simply stock schemes, the promoters of which are merely looking for easy marks. Don't be their target.

In closing I cannot refrain from quoting from Dr. Lydston's paraphrase of "Thanatopsis" with his apology to the shade of William Cullen Bryant.

"So live, that when thy time has come to join the enumerable caravan which moves to that mysterious bourne, peopled by doctors who have died of in-nutrition, thou go not like the general practitioner called at night, scourged from his office, but sustained and soothed by the motto, 'never trust' and approach thy grave like one who wraps his stocks and bonds about him and lies down to peaceful dreams."

A FOOL'S PARADISE—SNAP DIAGNOSES.¹

BY

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Dispensary.

FOREWORD.

The possibility of being misunderstood when our thoughts are transferred to paper is so great that this foreword becomes necessary. The object of the author is in no instance meant to be critical; it is to draw attention in a manner somewhat out of the ordinary to the fact that snap diagnoses are often dangerous, frequently unnecessary and always detrimental to personal endeavor and thought. Therefore the writer would ask that more than usual attention be given to the contents of the paper, so that its purposes may be served and the chance of misunderstanding reduced to the minimum.

—O—

Figuratively speaking, Paradise is a place or state in which there is surpassing delight and entire contentment.

¹Read before the Williamsburgh Medical Society, May 9th, 1910.

In the Standard Dictionary, there are several definitions of "a fool" and the writer assumes the right to select the one that best suits his purpose.

There are two such that will serve; the first, "a person lacking in common sense and wisdom"; the second, "one who is fooled or misled."

The first class is unfortunately large and as the spread of medical knowledge among the laity becomes more prominent, this class becomes more active. They are upon every hand and sooner or later become the troublesome problem of every practitioner. There may be various motives which actuate them in their activities but this does not change the result which is often the disorganization of the processes of thought and conclusion based upon knowledge as exhibited by the examining physician and his reluctant although diplomatic acceptance of what he feels to be based upon nothing more tangible than guesswork. Say what we will about the high ideals which should obtain in the medical career, it still remains practically the fact that the younger man who has not reached a position of independence is sorely tempted to accept the dictates of the family, or more often of the meddling friends of the patient, and make his own superior knowledge take the lower plane demanded by policy.

Whether he is ever right or justified in doing this the writer does not presume to say; the purposes of this paper do not demand the settlement of that question.

Several years ago, while the writer was still in the general practice of medicine, he had several experiences with the class of fools "who lacked common sense and wisdom," and while the exact data is forgotten, the experience of the encounter re-

mains as vivid as the day on which it happened.

Called to see a boy who gave the history of a cough persisting for several days without rise of temperature and without evident discomfort, the writer's examination showed a much reddened pharynx and a very slight naso-pharyngeal catarrh. After an expression of opinion by the attending physician, the old woman who lived upstairs; the one who lacked common sense and wisdom in medical matters, asserted positively that the boy then had whooping cough; she knew it. From this freely given advice with no basis of either sense or wisdom, the physician dissented; there was nothing in the history or examination to suggest pertussis. Subsequent events added very materially to the discomfort and chagrin of the physician, for they proved in time that the fool was right.

The second class is fortunately smaller and in some instances has a few good reasons for its continuance.

Now, when either class enters that state of surpassing delight and surround themselves with entire self-contentment, they immediately create a self-made "Paradise" which is narrow in its limits, suicidal in its influences, and unreal except to its deluded creator.

It has no existence in fact, but for the time being egotism has its undivided sway and the feeling of superiority which it engenders has the ascendancy; the fool content to *loll* in his selfmade paradise, seems to be happy.

The second class of fools are those "who are fooled or misled." We all get into this class at sometime or other. However, let me emphasize this fact: that although often "fooled and misled" there

is no need of our ever remaining so and becoming a fool in a paradise of our own making. As a conscientious workman, I may become soiled and begrimed with dirt. This may even redound to my credit so that I may point to the soiled hands and the besweated brow as evidences of my right to live. But if soap and water are handy and my toiling is done, I may refuse to remove these evidences of my toil, and thereby become a menace to myself and an offense to decent men. And so there is no discredit in being fooled or misled, but to remain in that condition indefinitely is as unwise as it is unnecessary.

As has been stated there are a few good reasons why we occasionally enter this second class and taste its sorrows. Commercialism is the order of the day and its influences are seen even in medicine. This brings about a condition wherein the physician is prevented by the inadequate remuneration from the public of devoting sufficient time to his cases. The demand seems to be by the public for a rapid and adequate diagnosis of the case by the physician, and a slow and inadequate payment of the bill by the patient.

A brief review of some suggestive cases will illustrate this point.

A boy of three years of age was referred to me during the height of the recent epidemic of anterior poliomyelitis with the diagnosis of that disease and the paralysis localized in the right upper extremity. The onset was sudden with pain and vomiting accompanied by a sharp diarrhoea. There was a clear history of probable exposure. Left alone, the child remained quiet but with the arm limp and immobile. The first examination was made with the clothing loosened but not removed and the diagnosis of poliomyelitis resulted. The sec-

ond examination with the clothing removed revealed almost at once the real cause of the symptoms. The vomiting and sharp diarrhoea were undoubtedly due to shock in a rachitic child and the shock was dependent upon a fractured clavicle which was plainly evident upon inspection. When questioned, the first examiner showed that he had the ability, the time, and the armamentarium to differentiate these two conditions, but in the presence of a known and widespread epidemic, the first conclusion was the easy one.

The next case is one of a type which is far too common. A boy of six years suffered from influenza and following the attack, he complained of pain localized in the left ankle. The diagnosis of rheumatism was immediately made, after a careful examination of the part, although an examination of the heart failed to show any lesion or irregularity. The family history was negative also. Despite this the diagnosis stood without further investigation. As the local and constitutional symptoms became progressively worse, advice was asked and obtained. Before a diagnosis was announced by the consultant, this question was asked of the first examiner: "If this is not rheumatism, what is it?" The answer was immediate and emphatic: "It is osteomyelitis." The consultant allowed the first examiner to thus make the diagnosis and the necessary immediate operation revealed a widely distributed osteomyelitis involving most of the tibia.

The first examiner by his careful general examination showed his intimate knowledge with both diseases and he demonstrated the fact that he knew that rheumatism exhibits its most characteristic lesions in the cardiovascular system in

childhood. But this latter conviction was not strong enough in him to emphasize the fact that given a child with an inflamed or tender joint or bone, that the last thing to be thought of is rheumatism and that other things must be absolutely excluded first.

If the time allowed and the purposes of this paper demanded it, the writer might acquaint you with the details of an instance of a child convalescent from scarlet fever, who was given suitable tonics and a radical change in diet, and promptly began to gain most rapidly, but the gain was not due to the treatment, but to a general anasarca dependent upon an overlooked kidney lesion.

Or of the very frequent diagnosis of meningitis which seems at times to be made without any attention to the etiology and symptomatology of the disease, but which is made upon the mere factors of delirium, somnolence or irritability, irrespecting entirely their causes.

Since the first of the present year, the writer has had five children sent to the hospitals with which he is connected for immediate operation for appendicitis; three others have come under his observation in consultation, and in all of the eight instances the diagnosis has been changed to one of lobar pneumonia and confirmed by the subsequent typical course. These, and many others that could be mentioned, are merely instances of snap diagnoses made under conditions where there is no need of anything but ordinary skill. The writer has purposely avoided entering that field of differential diagnosis which is rich in its possibilities for the display of close observation, correct judgment and large clinical experience. In this latter field it is not always a mere question of knowledge

but the inborn capacity and capabilities of the man enter largely. Intuition—that faculty of the quick perception of truth without CONSCIOUS attention or reasoning is a large part of some men's makeup. It is a splendid possession in medicine. Used rightly, and that means that the conclusions must be confirmed by the results of the physical examination, it becomes a tremendous power in the ferreting out of the unknown in disease. But unbridled, it becomes unmanageable and in time will throw and trample its possessor.

Then there is the influence of an abused medical charity which demands from the attendants at such clinics a quick and imperfect examination, an opinion based upon only part of the facts and a treatment that may bring comfort but infrequently effects a cure. And as "a workman with poor tools is twice tried" so the false economy that robs the physician of a full equipment of his instruments of precision and laboratory aids, places the attendants in a position where they cannot do anything but be "fooled and misled."

With a knowledge sufficient to cope with any of the ordinary diseases affecting humanity, with a devotion to his work that is best evidenced by his attendance upon such clinics, the physician is fully equipped for the task, but his knowledge and devotion are sapped and vitiated by a penuriousness of management and public which sees nothing except the dollar sign.

We are supposed to observe disease and to relieve it. We are supposed to study it and prevent it.

There is a tremendous difference between "seeing" a case and "observing" a case. Everyone must admit that all seeing is not observing, and that a great deal of what parades under the

name of observation is not observation in fact. Familiarity with a word often brings about a misunderstanding of its scope and limitations.

We say that "we observed a case." What do we mean by that? Is it that we have come into direct contact with a certain disease; is it that we have even gone a step farther and applied such methods or remedies as will bring about the comfort desired; is it that we have done all within our power to protect the patient and the public?

Admit that we have done all these and in such manner as to entice the "well done" of the public; we have not yet "observed" the case. Medically speaking, observation involves more than seeing, more than comforting, more than protecting, more than receiving approbation; it involves study. This study must be linked with the future and the past; with the future, that unusual features may be fully noted and redound to future elucidation and explanation; with the past, that the relations of usual or unusual features may confirm or disprove the experiences of our teachers.

There is a thrift that brings beggary. The time we pay out for the study of disease enriches us; the time and strength we save through its neglect, impoverishes us.

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SURGICAL HINTS.

The presence of intussusception in an elderly person points to a malignant growth as the causative agent.

Blood appearing at the meatus after the passage of clear urine has probably come from the bladder or prostate; if at the beginning of urination, from the prostate; if between the times of urination, from the urethra.

THE TREATMENT OF MENORRHAGIA IN YOUNG WOMEN.¹

BY

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By menorrhagia is meant an excessive loss of blood during a menstrual period and by metrorrhagia a loss of blood between the periods. Since many cases of menstrual hemorrhage continue from one period to another, the terms menorrhagia and metrorrhagia may be indistinguishable. The object of the present communication is to call attention to this condition or to be more accurate to this symptom, occurring during puberty and young unmarried life. In the opinion of the writer this subject has been much neglected and its importance greatly underestimated both by the general practitioner and the gynaecologist. In looking over the histories of gynaecological patients one cannot but be impressed with the frequency with which patients who have suffered from hemorrhages later in life are found to have had profuse menstruation during puberty. The important question is: Could the conditions causing hemorrhages have been avoided by attention during early menstrual life? I believe in many cases that they could, and nowhere in the range of medicine is prevention of disease of more importance than here.

In making a diagnosis of menorrhagia it is first necessary to decide what is a normal loss of blood in any particular patient. The term is relative, for in an

¹Read before the Alumni Association of the City Hospital, April 6th, 1910.

anaemic woman a loss that would be excessive to her might be less than normal for her robust and plethoric sister. Some women lose more blood in a short period than others in a period extending over a greater length of time, and for this reason an effort has been made to estimate the loss of blood by the number of napkins used and by some authors the average number has been placed at twelve for the whole period, or three a day. This is entirely arbitrary and varies according to the personal habits of the patient.

Since menorrhagia is a relative condition, some observations upon menstruation may be of value in making a diagnosis in any given case. Dr. Emmet with infinite care and immense amount of labor has given us statistics based upon the menstrual histories of 2,330 women. The women came from all parts of this country, and from the various walks of life. He found that the average age of the first menstruation was 14.23 years. In regard to regularity of menstruation 72.33 per cent. were regular from the beginning; 18.92 per cent. were regular after a time, and 8.74 per cent. were never regular. The average time for those who were irregular at the beginning and became regular was 18 months and 3 days. The average duration at puberty was found for all of these women to be 4.82 days. For the class of women who were fruitful in after life the duration was 4.91 days, while for the unmarried and sterile the flow was of shorter duration. In regard to pain, the records show that 75 per cent. were free from pain, while more than half of those who suffered during the flow at puberty (this does not refer to those who suffer only at the beginning) were sterile in after life. On making a com-

parison of these women in after life it was shown that marriage and pregnancy increased the flow and as this gradually diminished, the flow of the sterile became lengthened. In looking for the causes of menorrhagia it is well to glance at the conditions upon which normal menstruation depends as far as we know them. It has been demonstrated that a gradually increasing pelvic congestion occurs and culminates in hemorrhage, mostly by diapedesis but partly also at the height of the congestion by rupture of some of the endothelial capillaries, and it is a fact that this periodic congestion is dependent upon the ovaries. Whether the general rise of blood pressure is due to an internal secretion from the ovaries, exerting its influence through the blood or is produced by nervous influences, or depends upon both of these factors has not been determined, but it is safe to assume that variations in the normal stimulation may result in abnormalities of menstruation.

Of no less importance is the response of the uterus to the ovarian stimulation; both the musculature including the blood vessels and the endometrium. The part played by the uterine contractions in controlling hemorrhage has been fully described by Theilhaber. He states that during the greater portion of the menstrual period the uterus is large and flabby, then the contractions occur which become gradually longer, while the bleeding becomes correspondingly less until the contraction becomes continuous and firm and the flow has ceased. From this he argues that insufficient muscular action may readily cause hyperaemia and this be followed by swelling and oedema of the uterine parenchyma, resulting in menorrhagia.

The response of the endometrium is also interesting. The congestion causes a definite swelling of the mucosa, and the stroma cells and glands become enlarged. The capillaries show a remarkable power of distension and the actual hemorrhage occurs by diapedesis and by rupture of some of the delicate capillary walls.

From what has been said one would expect that any disturbances in the circulation, whether arising from increased arterial supply causing overfilling of the capillaries or from nervous obstruction producing over-distension by backward pressure, would tend to produce uterine hemorrhage.

The causes of abnormal uterine hemorrhage fall naturally into the three groups as arranged by E. H. B. Macdonald of Scotland, and from whom I have quoted freely.

1. Abnormalities in the periodic ovarian stimulation.

2. Conditions giving rise to muscular insufficiency, either from (a) actual deficiency of muscular tissue or (b) loss of tone and consequent deficient response to vaso-motor stimulation.

3. Conditions giving rise primarily to continued congestion of the endometrium, either from (a) increased arterial supply or (b) venous obstruction.

Of the ovarian stimulation we know little except that the growth of the uterus is dependent upon ovarian activity, and that menorrhagia occurred in connection with cystic diseases of the ovaries was long ago noted by Tait. From what has been said of the importance of the integrity of the musculature, it is easy to conceive how severe hemorrhages may occur from insufficient muscular development during puberty or from loss of tone throughout

the body, or a local atony of the uterine muscle directly, or through fatigue of the nerve cells.

It is the belief of the writer that the most important factor in the causation of these hemorrhages of puberty and young women is *venous congestion*. To bring this to your attention more forcibly permit me to quote from a paper upon a relative subject read by me before the New York Obstetrical Society last year. "As long ago as 1879 Dr. Emmet described the uterus as an *erectile organ* surrounded by a mass of blood vessels, pressing in every direction through the loose connective tissue of the pelvis and directly affected by any increase or diminution of the neighboring circulation. In scarcely any other part of the body have we such a network of vessels within the same extent of space. In consequence of the erectile character of the uterine tissues these vessels in time become varicose or overdistended from continued obstruction to the circulation and have an almost incredible venous capacity. As a stream will saturate the ground and lose itself in a marsh, so will the circulation through the pelvic cellular tissue and in diseased conditions become equally sluggish. In attempting after death to inject the vessels in the pelvis of a female who has long suffered from uterine disease, it will be found that the distinctive forms of the veins are frequently lost at different points and with all cases the injection will become extravasated and diffused." The recent histological investigations of Keiffer have furnished ample proof of the correctness of Emmet's views on the subject.

Nothing is so important to the woman and to the human race as the prevention of menstrual abnormalities, and to this end

much can be done by the family physician and the specialist.

Before the girl reaches the menstrual period she should live as much as possible out of doors and indulge in exercises and sports, such as running, skating, jumping, horseback riding, swimming, etc., side by side with the boys. A prominent physical instructor informed me that the records made by the girls of his gymnasium classes under the age of thirteen fully equaled those of the boys of a corresponding age.

When menstruation begins the conditions are different, as pointed out by Goffe (in Bovee's *Gynaecology*). "It seems a strange law of nature that two or three years have been set aside for the development of the generative organs. This is the designated time for the establishment of menstruation and the power of reproduction. If it is not accomplished at this time the infantile organs of generation persist, the normal blood supply is not established, menstruation is not properly performed and the unfortunate ills and affections peculiar to women begin." At this time is required all the physical energy that the individual possesses and consequently study should be relaxed or suspended in order that the strength may not be diverted to the brain and nervous system. Rest, physical and mental, should be insisted upon before and during the menstrual period and it would be better were girls taken from school and compelled to assume the horizontal position for the first days of each period until the function is well established. Except at the times mentioned (just before and during menstruation) girls and young women should be compelled to take out-of-door exercise, for in no way can the uterine muscle be so well developed or the cir-

culation be equalized. In passing allow me to remark, that if some of the industrious and well meaning persons of this and other large cities who have interested themselves and written so feelingly about the conditions of child labor in the south would only remove their spy glasses long enough to adjust their lorgnettes to view our child labor as seen in the large department stores and work shops in our midst much good could be accomplished. No more pathetic sight can be seen than the underfed, ill nourished, anaemic and undeveloped specimens of adolescence as represented by these cash girls and apprentices, many of whom never see the light of the sun and have no opportunity to develop physically or mentally.

The treatment of girls and young women suffering from menorrhagia and metrorrhagia should be along physiological lines. When called upon to attend one of these patients it is most important to take into consideration her general condition. The excessive flow may be dependent upon a cardiac lesion or chlorosis may be the cause and the possibility of hemophilia should not be overlooked. Rest in bed, careful regulation of the bowels and tonics judiciously given, especially strychnine, should be the routine. Iron is best avoided and unless the uterus is large and flabby ergot is of no value, as it increases the blood pressure. *Viburnum prunifolium* given just before and during menstruation is often of great benefit. In cases of severe hemorrhage the feet should be elevated, a very hot prolonged douche given, adrenalin administered hypodermically and stypticin given by mouth. The vagina may be tightly packed with gauze and the packing changed in twenty-four hours. In extreme cases subcutane-

ous infusion and bandaging of the limbs may be required. That hemorrhages occurring at puberty may be severe and alarming most of us know. Last summer Dr. Milliken of Hamilton, O., related to me the case of a young girl who actually bled to death during the second year of her menstrual life. She began with menorrhagia and in a few months the flow became continuous and resisted all the efforts of the physician to check it. When seen by Dr. Milliken in consultation the patient was moribund. No autopsy was permitted and the cause of hemorrhage never discovered, but the doctor felt justified in eliminating causes depending upon pregnancy.

Emmet's figures show that those women who were abnormal at the beginning of menstrual life and afterwards became normal required eighteen months on an average to become regular and if irregular beyond that time they rarely became regular in after life. Therefore during the first year and a half unless the flow is very excessive the treatment should be general and not local. Beyond that time it is fair to presume that more active treatment will be required and the patient should be examined under an anaesthetic and permission should be obtained to do what is found to be necessary at the time of the examination. The uterus should be thoroughly explored and curetted and a displacement corrected if needed.

Since most of these hemorrhages are the result of pelvic congestion, what can we do to relieve and prevent that condition? The most potent means of equalizing the circulation is by muscular exercise. Assuming that the uterus is an erectile organ, we can note the effect of exercise upon the pelvic circulation of the male.

Trainers have long ago noted that athletes in severe training are practically impotent, and that men of excessive muscular development, the so-called "strong men," are not nearly so active sexually as those who lead sedentary lives and are muscularly weak. The same is true of women, for I have been creditably informed that while undergoing severe muscular exertion such as acrobatic performances and feats of strength that these females have little or no menstrual flow. The knowledge of these facts are valuable hints in the treatment of the cases under consideration. If by reason of pelvic inflammation the patient cannot exercise without pain, then she should be massaged and systematically. By this means the osteopathic treatment has produced some remarkable results. When the uterus is enlarged and the endometrium thickened, curettage gives varying periods of relief by stimulating muscular contractions, but as this does not remove the cause (pelvic congestion) permanent results cannot be expected. That this is true is proven by the many patients upon whom this operation is performed repeatedly. During the past year one case was reported that had been curetted twenty times and the uterus finally removed and no demonstrable lesion found. In patients who have reached the menopause or the latter years of menstrual life it is customary to perform hysterectomy in cases of uncontrollable hemorrhage, but in young women every effort should be made to conserve all of her sexual organs, and with this in view I have been greatly interested in a procedure that aims to relieve this condition with no sacrifice to the patient. Two and a half years ago I saw a young girl under the care of Dr. Jarman of this city, whose bleedings were so profuse and in-

tractable that two gynaecologists of national reputation had advised that hysterectomy be performed, since repeated curettings and all other means had failed to give relief. Her uterine arteries were ligated by Dr. Jarman and she made a speedy recovery and has remained perfectly well ever since.

In September of last year a girl of seventeen came under my care with the following history: Menstruation first appeared at 13½ years. She then missed three months and menstruation returned profusely and irregularly, lasting from 7 to 8 days and never remaining away a full month. Then during the summer of 1908 she missed three months, in September began a continuous flow for 40 days. Then relief for 12 days, to be followed by profuse flow for two weeks. In January she was free for nearly a month and then began a continuous and profuse flow for 35 days, when she was curetted. By the operation she was relieved for a month and then the same condition returned and the flow became almost continuous during the summer. In August while at a summer resort she had such a profuse hemorrhage for two weeks as to necessitate the constant attendance of two physicians. After this she was brought to the city. She seemed very pale and complained of shortness of breath, but was well nourished and well developed. There was no cardiac, pulmonary, nor kidney lesion and no history of constipation and no pelvic pains or dysmenorrhoea. Her hemoglobin was found to be 602.

The uterus was larger than normal and of softer consistency and rested upon a lower plane in the pelvis, but was otherwise in good position. The ovaries and tubes appeared to be normal.

All manner of drugs had been given her and she had remained in bed for weeks at a time with little or no benefit.

The patient was put under an anaesthetic and the uterus thoroughly explored and curetted. Nothing beyond a thickened endometrium was found and as might have been expected the pathological report was "hyperplastic endometritis."

By means of a horizontal incision just above the cervix the bladder was separated from the uterus sufficiently to enable the uterine arteries to be demonstrated and ligated. The vessels were tied just above the ureters and with 40-day catgut. The flap was then sutured in place and the patient put to bed. She had no reaction and little pain after this simple procedure. She was out of bed in two weeks and menstruated for the first time five weeks after the operation. The duration of the period was four days and rather scanty, otherwise normal. Since then her periods have been normal both in time and duration and her physician informs me that she seems to be in perfect health. In a letter received a few days ago she says that she has never felt better.

This, I take it, was a case of pelvic congestion and by diminishing the arterial supply the veins were able to empty themselves and the circulation was equalized.

Of course little can be claimed for this operation, because the cases are too few in number and time too recent after its performance to prove anything. It is merely offered as a suggestion, in the hope that others will try it in those cases of menorrhagia that are dependent upon venous stasis.

In closing let me urge upon every practitioner who has one of these young women under his care, the importance of correct-

ing menstrual irregularities and to assure him that he has not done his duty or merited the trust imposed in him if he neglects the opportunity to save a woman from a life of semi-invalidism.

244 West 73rd St.

GASTRIC JUICE FROM THE LIVING PIG AND ITS THERAPEUTIC APPLICATION.

BY

MAURICE HEPP, M. D.,

Paris, France.

My experiments for the obtaining of natural gastric juice were begun in 1899, and were inspired by the favorable effects observed during seven years with the gastric juice of dogs (Tremont). It was my desire to suppress the disadvantages of the gastric juice of the dog as regards its exaggerated acidity and unpleasant odor. Tremont's idea appeared to me a fertile one, and offered an interesting field to surgical activity. A series of the most varied operations were performed by me, first the isolation of the stomach; then transverse division, with the transposition of the oesophagus into the pyloric pouch; next longitudinal division; then the making of a small stomach, at the expense of the greater curvature, according to Pawlow's method with which I was unacquainted at the time; and finally sequestration of the stomach, according to Tremont's plan. All these operations were productive of some results, all provided for the juice from a closed pocket, which juice being very acid, often gave rise to very extensive ulcerations in the pouch. I then decided to simply exclude the stomach from the alimentary route, by implanting the oesophagus into the duodenum, leaving

the pylorus open and to collect the secretion from the organ isolated in this way, but still maintaining its physiological relations, with vessels and nerves intact. By these means I succeeded in regularly collecting the gastric juice of the animal, which remained in excellent health, without developing any complicating ulceration and which continued to grow like a normal animal.

After various experiments upon the dog, I decided to perform this operation upon the pig, for the theoretical reasons that this animal is omnivorous and has a perfect assimilation, furthermore for the practical reason that the gastric juice from its entirely isolated stomach is in its chemical composition identical, from all points of view, with human gastric juice.

In order to make of the pig a producer of gastric juice, I perform my operation as follows: I make a median laparotomy, from the xiphoid process of the umbilicus. I grasp between the thumb and forefinger of the left hand, the protuberance caused by the abdominal end of the oesophagus, this protuberance is then brought forward; the peritoneum in front of the duct is split longitudinally with a grooved director; the index finger is inserted into the slit, and the oesophagus is separated from the pneumogastric nerves which accompany it. This separation being carefully accomplished, the index finger is passed under the oesophagus which is enclosed in very loose cellular tissue, and as long a segment of the oesophagus as possible is drawn downward into the abdomen. It is then seized transversely, in a large clamp, and divided above the cardia, which latter is at once grasped, passed through an accessory lateral incision and is fixed outside of the larger laparotomy wound; the cardia is

thus connected with the abdominal wall through a fistula. Returning to the upper end of the oesophagus, I bring the same in contact with the duodenum, and as wide a termino-lateral anastomosis as possible is made between the oesophagus and the duodenum at a distance of 10, 12, or 15 centimeters from the pylorus. Now there is nothing left to be done but to close the abdomen by a suture in three layers.

Provided that strictest asepsis is observed, the animal promptly recovers from this operation. At the end of eight days, the stomach is washed through the fistula, and at the end of a fortnight, the collecting of the gastric juice can begin. This collection is made twice daily, about forty-five minutes after the animal has been fed, for at this time, the stomach is filled to the maximum degree. It is almost empty when the animal is fasting. An hour after eating it begins to empty itself towards the bowel.

For the collection of the gastric juice, the animal is suspended by means of a suitable harness, and a catheter is inserted into the fistula. The flow is started by aspiration; the gastric juice runs easily. It is at once passed through a cloth then filtered over cellulose, and collected in sterile flasks. It then remains under observation and study during three days in a water-bath, at 38° C. and all flasks which become turbid are removed; the clear flasks are bottled in sterile phials, according to the methods of the Pasteur Institute. After the phials have been corked and sealed, they are again placed in the hot water bath for three days, and are ready then for use.

I pointed out that my animals continued to develop after the operation; some of them were operated upon when about six months old, weighing 50 kilogrammes.

Their stomach, although out of use, has continued to develop in the usual manner, showing very evidently the trophic influence of the pneumogastric nerves, division of which leads to atrophy of the organ, even when it continues in its function.

Certain interesting modifications take place at the level of the oesophago-duodenal anastomosis, the duodenum dilating into a kind of new stomach. At the same time, the walls of the oesophagus and the intestine become hypertrophied, plainly illustrating their adaptation to a new function. It appears to me to be certain that part of the gastric juice flows into this pouch, and that the digestion is therefore continued in a perfectly normal manner. This is the reason why the general condition of the operated animals remains so favorable.

Liquids swallowed by the animal do not flow back towards the stomach, as I convinced myself through the introduction of colored fluids. A few solid particles do penetrate into it, however, meaning that a mass of solid matter forms at the level of the small duodenal stomach, identical in every way with that of the normal stomach, and carrying a few pulverized remnants of food towards the pylorus.

The gastric juice which I collected by means of the above outlined procedure, is accordingly a physiological gastric juice. It is identical in every way with the gastric juice of pigs, obtained simply through a fistula, the appearance, the color, and the chemical reaction are identical, but it nevertheless differs considerably from the gastric juice obtained after a total isolation of the stomach, with enclosure of the pylorus. Whereas the latter is colorless, slightly opalescent, of identical composition

as that of man, of medium acidity, the juice from a stomach which has been simply excluded, is yellowish, more viscid, very weakly acid, almost neutral, poorer in organic salts, relatively richer in mineral salts, having a weak proteolytic action on raw albumen, and none on boiled albumen.

These characteristics are attributable to a peculiar anatomical configuration of the pig. The choledochus in this animal opens at the level of the pyloric region. If the pylorus is divided, it is sure to be divided also. It does not unite, as in man, with the Wirsangian canal, which on the contrary opens by itself into the duodenum, at a distance of 15-20 centimeters. This arrangement brings it about that in normal condition, a part of the bile is poured into the stomach and neutralizes the acidity of the juice; it is even capable of neutralizing a quantity of acid greater than the normal quantity, for when hydrochloric acid is added to the juice, the acid is found in the analysis only in the form of chlorine.

The juice obtained by me, although in every way analogous with the physiologic gastric juice, does not satisfy various authors (Loeb, Flexner, Mathieu), who claim that this gastric juice was either not normal or that it could not have an efficient therapeutic action. These objections were at first very distressing to me, as I could only reply to them by my therapeutic results, and therapeutic result is always open to suspicion, or at least discussion. At the present day, however, these objections have ceased to trouble me, for I am no longer alone in affirming that under normal physiological conditions, the bile and the pancreatic juice flow back into the stomach and thus neutralize in part the acidity of its secretion.

Boas, Tchlenoff, Boldyreff, Volhard, Kaltzenstein, have established by trypsin demonstrations the very frequent co-existence of pancreatic juice in the stomach; and Miga, in Pawlow's laboratory, showed that when an acid solution is introduced into the stomach, the acidity of this solution rapidly diminishes on account of the compensating influx of the secretions of the intestine into the stomach, by way of the pylorus. He showed that this part neutralization is even necessary, in order to bring about the passage of the foods through the pylorus towards the intestine.

In the beginning of my investigations, I noted that one to two dessertspoonsful of the juice, which the animal secretes in hundreds of grammes, sufficed to re-establish profoundly impaired digestive functions in man and I decided that such a small quantity certainly does not act through supplementing the digestive fluids. I thought that the gastric juice, especially the juice obtained by me contained a "quid ignotum" which is the secret of its efficiency, and which is neither hydrochloric acid nor pepsine. This seemed so much the more evident, as I had seen a number of patients react favorably to the gastric juice, after they had taken for months without results hydrochloric acid lemonade and pepsine. When Professor Von Noorden, in 1904, furnished me with the results of his analysis, which showed that the dyspeptic patients treated by him with my gastric juice had experienced a return of their gastric juice secretion and a return of the secretory processes towards normal, it afforded me the evidence that this almost neutral juice certainly contained an excito-secretory substance, which was neither the hydrochloric acid nor the pepsine; and I did not hesitate, when re-

porting these results before the Société de Biologie, to assert the existence of this substance and to credit it with the therapeutic efficiency which many others had already observed.

In the year 1905, Frouin with whose work I was entirely unacquainted, published before the Société de Biologie, the investigations which he had carried out in the Pasteur Institute with the neutralized gastric juice of dogs. These ably conducted investigations showed that both when ingested and when injected subcutaneously, the strictly neutralized gastric juice exerts upon the gastric mucosa a powerful excito-secretory influence, which is not referable to the hydrochloric acid or to the pepsine, hence, there must have been in the gastric juice an excito-secretory substance, independent of the classical constituents.

I immediately began experimenting in order to ascertain the presence of this excito-secretory substance in the gastric juice of pigs, as obtained by my method.

For this purpose the stomachs of two animals were entirely isolated by dividing them a little above the pylorus, so as not to injure the choledochus, and by implanting the oesophagus into the duodenum, as was my habit to do. During a fortnight, I measured daily the gastric secretion of each animal; this secretion amounted on an average to 450 cubic centimeters daily in one animal. I then studied upon this animal the influence of an injection of artificial serum, upon the gastric secretion; it was found to be very weak. I then injected under the skin 100 centimeters of perfectly neutralized gastric juice, and succeeded by means of successive injections, not only in doubling and tripling the normal secretion but increasing its

quantity six times. This animal died shortly afterwards as a result of pancreatitis, which illustrated at the same time the very powerful excito-secretory action of my ordinary gastric juice, (the other animal succumbed at the end of three weeks to a gastric hemorrhage, from a round ulcer at the cardiac end of the stomach).

Since that time the investigations of Edkins (*Journal of Physiology*, 1906, Vol. XXXIV) have demonstrated the existence of a gastric "Stimuline" which he obtained like the intestinal "Stimuline" of Bayliss and Starling, by boiling pyloric mucosa with acid, water or peptone. This "Stimuline" when injected into the jugular vein and carried to the stomach by the circulation, is alone capable of causing the reappearance of the stomach secretion in an animal, the psychic secretion of which has been stopped by division of the pneumogastric nerves. It is secreted only by the pyloric glands, not by the glands of the stomach.

Supported by this set of concurrent proofs, I can assert to-day that the gastric juice, as obtained by me, *owes its action to a specific excito-secretory substance*; and that this gastric juice serves to arouse the gastric secretion and to re-establish the normal function of the stomach. This accounts in a very simple way for the favorable action of weak doses, drops for children, teaspoonfuls or dessert-spoonfuls for adults, which was altogether incomprehensible by attributing to the remedy a direct digestive function entirely out of proportion to its real action and dosage.

This leads me to consider briefly how the gastric secretion must be interpreted, from the higher physiological point of

view. It begins, as has been positively shown by Pawlow, with the secretion of psychic or appetite juice. Pawlow's experiment consists in dividing the oesophagus at the neck and attaching its two ends separately to the skin of the neck and then to create a gastric fistula. When the animal eats, the food escapes through this fistula, while its stomach secretes a juice, the secretion stopping as soon as the animal stops eating. This experiment is always successful in dogs, animals having a lively imagination, whereas it regularly fails in the pig, even when the animal keeps on eating for an hour and longer, with indefatigable greed.

Hence, if the psychic secretion represents for man and for intelligent dogs the first secretion, this secretion being absent in all other species, as demonstrated by me—it is not possible for it to be, by a reflex process, the cause of the secondary alimentary secretion, as held by Pawlow.

There was a reason to think that the gastric secretion, as well as the intestinal secretion, has a chemical stimulus, and that this chemical stimulus is contained in the gastric secretion itself, which is thus kept up constantly by means of this stimulus.

The gastric secretion is mainly a chemical secretion with its agent contained in the gastric juice itself; in animals whose stomach empties itself rapidly and completely, and which are also active and intelligent animals, a new psychic secretion is necessary to arouse again the intermittent, suspended secretion, by the absorption of a new quantity of stimuline. In indolent non-intelligent animals, such as pachyderms, solipeds, the pig, whose stomach is never completely emptied, the gastric juice secretion is more or less continuous, always pouring the gastric "stimu-

line" (the "hormone" of Edkins), into the intestine. This chemical stimulus renders all the digestive secretions interdependent and self-dependent, conjointly responsible, as it were.

In my personal opinion, this view besides justifying the old assumptions expressed by me at the Madrid Congress of 1903, at the same time justified my procedure for the obtaining of a natural gastric juice, namely the unilateral gastric excision, with an open pylorus; this operation permits the animals to regularly maintain their gastric secretion by pouring gastric "stimuline" into the intestine; it alone permits us to collect the total juice of the pyloric and fundus glands, whereas the small stomach of Pawlow yields only the juice of the fundus glands, without the "stimuline," it alone permits, due to the slight alimentary reflux from the intestine towards the stomach through the open pylorus, the collection of an active "stimuline" by means of the necessary mixture of dextrine and pyloric juice, according to Edkins; it alone permits the producing animal to remain in good health, a necessary requirement in order to utilize its natural secretion.

Compared to these advantages, what matters the drawback of furnishing a weakly acid gastric juice, of low proteolytic power, the principal objection which has been raised by some against my gastric juice? I reply to them by saying, that I prefer to introduce into the stomach an absolutely harmless neutral remedy as long as it is known to me to possess a superior therapeutic efficiency, and that I care little for the very uncertain additional advantage of providing to a very slight degree, an artificial digestion which would be more satisfactorily accomplished by an artificial

juice composed of hydrochloric acid and pepsine, if the gastric opotherapy, with a natural juice, had no other object but this digestion.

Having shown how my gastric juice is obtained, how it is composed, and why it acts, I shall now discuss as concisely as possible under what circumstances good and often excellent therapeutic results may be obtained from its use.

Gastric Insufficiency:—Deduction from above facts suggests at once that such a medicinal agent is indicated in all those cases in which there is failure of gastric secretion, either through an anatomical change of the stomach glands, or through a functional stoppage of their secretion and also in the disturbances resulting from the adulteration or absence of this secretion.

This deduction is entirely confirmed by clinical observation. I am indebted to Professor Von Noorden, and to Professor Surmont of Lille, for the most complete and extensive studies of the action of the pig's gastric juice, in gastric insufficiency, illustrated by perfectly concurrent analytical data.

The article of Professor Von Noorden appeared in the December number 1903, of "*Therapied der Gegenwart*," Professor Surmont's work formed the foundation of Dr. Ericart's inaugural dissertation (These de Lille, 1907). The patients subjected to these investigations were all suffering from a gastric insufficiency, either primary, or secondary through chlorosis, incipient tuberculosis, or chronic dysentery. In all these cases, it was noted that the insufficient gastric secretion, after resisting various diets and treatments, *was very promptly and distinctly improved*, permanently so in a number of cases, by the employment of two to three tablespoonfuls

of gastric juice daily. In all, the changed secretory relations show a tendency to become normal secretion in some, and actually surpassing it in one patient, who developed hyperchlorhydria.

In a few very grave cases of total anachlorhydria (achylia gastrica), the effect is but slightly marked or absent; but these patients, like the former, are improved from a functional point of view, the pains frequently ceasing after the first doses, and with returned appetite, cheerfulness and strength are regained, and the body weight increased.

We are here confronted with a *striking phenomenon*, which certainly indicates a specific action, all the more remarkable with a liquid (which some refuse to endorse, because it contains no free hydrochloric acid) causing the total chlorhydria to return to normal.

I therefore feel obliged to insist on emphasizing certain points which I have studied particularly: namely the favorable action of the pig's gastric juice on the anorexia and gastric disturbances of tuberculous patients, and its excellent effect upon diarrhoeas in general, but especially those of infantile gastroenteritis, for which ailment our stock of useful remedies is so limited.

Tuberculosis:—As tuberculosis patients, with rare exceptions, are also sufferers from gastric insufficiency, I believed since my first investigations that the stimulating gastric juice must be the remedy of choice for their anorexia and digestive disturbances. My expectations were readily confirmed by practical experience, the gastric juice proving serviceable in all the stages of tuberculosis. In dealing with a case of incipient tuberculosis, afebrile, with anorexia and emaciation, it is exceptional

for the gastric juice to fail to promptly re-establish the patient's appetite, which sometimes becomes enormous, and to correct at once the painful slowness of the digestion; it has happened repeatedly under such circumstances, that *thanks to this powerful arousing of the appetite*, I have succeeded in obtaining the *actual and permanent cure of the disease*.

Unfortunately the effect is not so constant when fever is present, the tuberculous poison then seems to *inhibit* the gastric glands, rendering them less accessible, or even insensible, to their natural stimulus; and it is then preferable to wait for a quiescent period, with freedom from fever, when the remedy will recover its virtues and permit a return to overfeeding. Even in the terminal stages of the disease, I have observed an unfortunately transitory resumption of the gastric functions, due to the employment of the gastric juice, or at any rate an arrest of the vomiting and a noteworthy subsidence of the pains, even in patients who are past all hope of recovery.

The gastric juice represents accordingly a *valuable adjuvant* in the dietetic treatment of the tuberculous patients, if not a curative agent. It must be stated however, that while it is highly efficient as an anti-diarrhoeal agent in general it does not serve at all for the control of the diarrhoea which indicates the invasion of the intestine by the tubercle bacillus.

Such is my personal experience. I would not dwell upon it, had it not been supported by a considerable number of physiologists. Gouel, physician to the hospital for Tuberculous, in Villepinte, G. Petit, Legry, physician of the Tenon Hospital, Surmont, Thumbert, Nienhaus, von Muralt (Davos), Meyer (Leysin), Lips (Wehrewald), and

very recently by J. Darwin Nagel (New York), all of whom have reported their results to me. At the time (1904) when I was made the object of severe criticism in Germany, on account of the composition of my gastric juice, I requested Professor Litten (Berlin) and he consented, to experiment with this juice upon his tuberculous patients, and he had the kindness to notify me by letter that the results obtained from it were most remarkable.

Infantile Gastro-Enteritis:—The above outlined indication for the gastric juice, although very satisfactory, is less so in my opinion than its indication in infantile gastro-enteritis. As a matter of fact, we do not possess any really efficient medicinal agents against the latter, whereas, definite triumphs are accomplished by means of the gastric juice. The gastric juice here acts after an elective, in some manner a specific fashion, first by *assisting the survival* of premature infants and those weakened through an insufficiency of digestive secretion; next, by *permitting the return to nourishment*, in the course and at the termination of acute gastro-enteritis and finally, by counteracting chronic gastro-enteritic conditions.

Two conditions only are required for its action; the gastro-enteritis must not be due to intestinal tuberculosis; and the digestive glands must not be entirely destroyed by the infection.

The action of the gastric juice in prematurely born and weak infants was investigated by Professor Guerin and Dr. D'Gaus-sel, of Montpellier. Although no larger doses were prescribed than 12, 15 or 20 drops at each nursing, the effect was a remarkable one. The child who had no appetite and remained indifferent to all stimulation takes the breast more greedily,

ceases to vomit, and its assimilation is shown by its weight, which begins to increase after a fall or a prolonged stoppage.

The favorable action of opotherapy, in infantile gastro-enteritis, has formed the subject of numerous contributions; the theses of Drs. Edhem and Malakiano (Montpellier) and of Dr. Nicolas (Paris) carried out in the services and under the direction of Prof. Mery, of the Hôpital des Enfants-Malades.

This favorable action of the gastric juice, in the gastro-intestinal affections of childhood, had been reported to me, since the beginning of my investigations, by Professor Sabrezes of Bordeaux, to whom as the translator of Pawlow, I had offered some of the first phials of my product. It was confirmed later on by Messrs. Barbier, Guixiou, Terrien, all pediatricians, and by countless colleagues, I might say by the unanimous verdict of those who have tried it, among them Professor Martinez Vargas of Barcelona, who has published an article dealing with this question. All are agreed that the pig's gastric juice acts in doses of half to one teaspoonful, administered before each partaking of food, in acute gastro-enteritis. In children who suffer from persistent diarrhoeas, and are constantly losing in weight it re-creates the gastric secretion, instead of supplementing it.

These remarks are equally applicable to chronic gastro-enteritis, *as long as the athrepsia* (malnutrition) *is not absolute* and the digestive glands remain capable of reacting to a stimulus. I have succeeded, as well as many others with me, in bringing back to life little cadavers which refused to absorb a mouthful of

fluid, but these cadavers still had gastric glands and intestinal glands.

Diarrhoeas—Dysentery:—The remarkable therapeutic action of the gastric juice in infantile enteritis, takes place likewise in the diarrhoeas of adults, whether resulting from gastric insufficiency or depending upon the influence of the season. It is possible that the gastric juice in these cases, by arousing the gastric secretion which has been weakened by the infection, cures the intestine by pouring into it an acid secretion which stimulates the arrested or diminished pancreatic and intestinal secretion.

At any rate this action is very evident, and it led me to study the influence which the gastric juice may exert in dysentery. I have no personal experience in this connection, but the observation of Professor Surmont, Dr. Fontoyne and Dr. Rigand of Madagascar, Dr. Challies of Vias, Professor Hobbs of Cairo; and a general summary of Dr. Le Feunteun, naval surgeon in Brest, cause me to believe that gastric opotherapy has a very favorable action in chronic dysentery. Dr. Le Feunteun writes me that he is inclined to consider my gastric juice as a true specific against chronic amoebic dysentery, which is not influenced at all by serum treatment.

Such are the indications of the opotherapy with the gastric juice of pigs, as obtained by me. Besides the indications, I shall briefly outline the contra-indications.

Contra-indications: The action of the gastric juice is not always certain in the psychic or organic nervous gastropathies, *nor in muco-membranous enterocolitis and it is nil in tuberculous enteritis with diarrhoea*. On the other hand, it is *not infre-*

quently favorable in allaying the pains of cancer of the stomach; Dr. Cettinger, physician of the Broussais-Hospital, spoke to me of his having made about ten favorable observations in this respect. Another instance was pointed out to me by Professor Surmont. Personally I have observed its effect on a patient suffering from an inoperable gastric tumor, intolerance and severe pains. In the case of two patients upon whom I performed gastro-enterostomy, the gastric juice exerted a very favorable effect upon the general condition, one of these patients suffering from neoplasm with adhesions to the liver and pancreas, is now living, after nearly two years, and has repeatedly had a return of his appetite and strength, thanks to the gastric juice. This influence is inconstant however.

Finally, the gastric juice must be cautiously employed in cases of *hyperchlorhydria*. Professor Courmont has frequently administered it successfully, in spite of the customary treatment, and he found that the gastric juice seemed to act directly upon the irritable mucosa, soothing it and regulating the secretion, in the same way as digitalis controls the arrhythmia while strengthening at the same time the cardiac systole. In certain cases of *hyperchlorhydria*, on the contrary, it will cause the return or an exacerbation of the pyrosis.

In case of ulcer of the stomach, the gastric juice seems to be *positively dangerous*.

To summarize: Clinical experience fully confirms what one is justified in assuming from the physiology, *the gastric juice is the true remedy for gastric insufficiency and its results*.

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DERMOIDS.

BY

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A necessary preliminary in the study of dermoids is a brief consideration of a few points in embryology.

The central nervous system is formed by infolding of the ectoderm along the dorsum of the embryo; the formation of the neural canal is completed by fusion of the lateral ridges of the folds with each other, forming the roof. This gives a line of union of ectoderm to ectoderm along the dorsum of the embryo from head to coccyx. The neural canal extends around the end of the notochord (the future spinal column) and communicates with the enteric canal. The anus is formed later by the invagination of the ectoderm, at a point anterior to the tip of the notochord (which later becomes the tip of the coccyx) thus leaving a pouch behind the anus which communicates at one end with the neural canal, at the other with the rectum. This is the post-anal gut and is normally obliterated; its remains form Luschka's gland.

The somata-pleura, which form the lateral walls of the body, extend inward from each side; gradually enclose the body cavity, and unite in the mid ventral line from perineum to root of neck. From the root of the neck to the point of the chin this line is broken by four lateral clefts, the branchial or gill clefts. The uppermost one of these becomes the tympano-eustachian passage. The lower three are obliterated. Thus we have an unbroken line of surface union between

the two halves of the body, extending from the vertex to the perineum dorsally, and from perineum to sternal notch ventrally, and a vertical line broken by four lateral lines from sternal notch to chin. The face develops from five processes below the cranium, one vertical extending down from the cranium, from which develops the nose and pre-maxillary bone; two lateral from which develop the superior maxillary border of the face and lower margin of the orbit. These two processes extend inward from each side and coalesce with the nasal process, thus forming lines of union, one on each side of the median line, extending from the outer angle of the orbit to the inner angle, thence down the side of the nostril, then straight down to margin of lip. These folds meet each other in the midline in the palate. The lowest pair of processes form the mandible and fuse with each other in the midline. The cranium early consists of skin closely adherent to the dura mater, later the bones of the vault develop each from its own center, between these two structures.

The foetal thyro-lingual duct extends from the foramen caecum at the base of the tongue, between the genio-hyoglossus muscles to the posterior portion of the body of the hyoid bone, thence to the pyramid of the thyroid gland. This is lined with epithelium.

The infundibulum, which is a prolongation from the brain, fuses with the pituitary body, which is a glandular development from the buccal cavity; this normally recedes into the cranial cavity followed by a diverticulum from the pharynx, the pouch of Rathke, which is obliterated. The auricle of the ear is formed by the coalescence of six tubercles.

After the splitting of the later walls of the embryo into somatopleure and splanchnopleure, the Wolffian body, from which the ovarian follicles are developed, is differentiated from the same group of cells which form the intestinal tract with its mucous membrane. The mucous membrane of certain rodents supports tufts of hair. In one kind of bird, the dartos, there is a growth of hair in the stomach which guards the pyloric opening.

The mucous membrane, therefore, develops some dermal structures. Upon these facts and the well known powers of mutability of mucous membrane, J. Bland Sutton explains the presence of dermoid structures in ovarian dermoid cysts.

Sutton defines dermoids as tumors furnished with skin or mucous membrane occurring in situations where these structures are not found under normal conditions. They only possess tissues which naturally belong to skin or mucous membrane.

Dermoids may be arranged in four genera:

1. Sequestration dermoids.
2. Tubulo dermoids.
3. Ovarian dermoids.
4. Dermoid patches.

Etiology:—As the first point in the explanation of the causes of dermoids, I will briefly describe implantation cysts which are a subdivision of sequestration dermoids. These cysts are acquired, not congenital in origin, they are of small size and occur most frequently on the palmar surface of the hands of tailors and seamstresses and in the eyeball. They follow slight punctured or penetrating wounds which carry in a small section of the dermis and plant it in the subcutaneous tissue.

The colony retains its vitality and acts as a skin graft; its sebaceous glands secrete and its epithelial cells are cast off; if hair follicles are carried in, they give rise to hairs. The secretions, being enclosed, naturally form a cyst; one or two hairs are frequently found in these cysts. They seldom acquire any considerable size. This explains how the dermal cells behave when caught in the subcutaneous tissue.

Second point: How and where are these dermal cells isolated when they are isolated and give rise to dermoids?

Slight irregularity or over-lapping in the lines of coalescence will bury a group of surface cells more or less deeply. Failure of obliteration of the embryonic canals which are lined with dermal derivatives or mucous membrane accounts for the location of the tubulo-dermoids. Inclusion and modified development of the embryonal cells of the Wolffian body, which are destined for mucous membrane, explains the occurrence in the ovary.

Pathology:—The walls of the cysts are composed of stratified epithelium, or mucous membrane, containing sweat glands, sebaceous glands and hair follicles in most cases. The contents vary from clear mucus or oil and cast-off epithelial cells to all the structures developed from the dermis, i. e., hair, nails, teeth, and flat bones. Note that heart, liver, bladder, etc., are never found in a true dermoid cyst.

The nucleus of the dermoid, excepting the implantation cyst, is present at birth. It may or may not be developed at the time. Some develop in infancy; some in advanced life; more commonly at puberty.

Sequestration Dermoids:—These are the most simple form, they develop along the lines of coalescence as already explained, also in the scalp by a pinching off

process during the development of the cranial bones, and in the same manner on the nose during the development of the nasal bones, so in these two locations they are not limited to the surface coalescence. If the sequestered nest remains superficial to the cranial bone the cyst does not enter the cranial cavity. If the nest is entirely separated and is buried under the cranial bone an intra-cranial cyst is the result. If the process of the nest is surrounded by bone instead of being cut off, it will give rise to a combined extra-and intra-cranial cyst. The most common locations of cranial dermoids are the anterior fontanelles andinion. They may attain the size of cocoanuts.

The most common location for facial dermoids is the outer angle of the orbit. I have seen three within the last year, one of which was attached to the lower margin, the other two to the upper. These all presented the main part of the cyst on the side of the face, but when dissected out were found to extend an inch or more toward the median line and deeply to the bone. These cysts rarely grow larger than a hen's egg, and contain hair, epithelial cells and sebaceous material. They can be differentiated from sebaceous cysts by the mobility of the skin over them, being deep structures, while sebaceous cysts grow from the skin.

The treatment is complete removal. It is necessary to be prepared to go deeper and wider than the superficial appearance would indicate. Two of these cases occurred about puberty, the third in a young adult. The cysts of the branchial clefts occasionally contain teeth. A dermoid situated over the sacrum at birth may be mistaken for spina bifida.

Tubulo-dermoids:—These occur in the obsolete skin and mucous membrane lined canals previously mentioned, i. e., thyro-lingual duct, post anal gut, infundibulum, and branchial clefts. Closure of both ends of the canal, without obliteration of the central portion forms the nucleus for the dermoid. In the lingual portion of the thyro-lingual duct the cyst forms a swelling which is rarely recognized at birth. As it increases it bulges the floor of the mouth and raises the tongue; one is reported which reached the size of a coconut. This was successfully removed. Cysts of the thyroid portion are prone to rupture and leave a median cervical fistula between the hyoid bone and the top of the sternum. Cysts of the pituitary body and the pouch of Rathke occur; the latter forms a cyst which projects into the pharynx.

From the post anal gut and rectum we have three varieties of dermoids; the thyroid dermoid, which is of large size at birth and in structure resembles the thyroid gland; the post rectal dermoids, which are rarely apparent at birth, grow slowly and usually contain teeth and hair. The rectal dermoids which project into the rectum are pedunculated and contain long hairs which occasionally protrude from the anus, these develop late in life.

The internal portions of the branchial clefts are lined with mucous membrane, the external portions with skin. These cysts usually contain only mucus or sebaceous matter, occasionally one contains a tooth. Rupture of these cysts or imperfect closure of the clefts leave branchial fistulae. The location of the openings of these fistulae are as follows:

1. Normal external auditory meatus and Eustachian orifice.

2. External opening close behind the angle of the jaw in front of the sterno-mastoid, or more rarely slightly behind the lobule of the pinna; the internal opening is in the recess of the tonsil.

3. Externally, anterior border of sterno-mastoid at the level of the thyro-hyoid space; internally, sinus pyriformis.

4. Externally, along anterior border of the sterno-mastoid within one and one-half inches of the sterno-clavicular articulation.

These cysts and fistulae show a tendency to be bilateral and hereditary.

Treatment:—Some dermoid cysts cease their growth and shrivel up. Most increase slowly unless inflamed or the seat of carcinoma or sarcoma. When removed the removal of the wall should be complete or a sinus will persist indefinitely.

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THE TREATMENT OF TYPHOID FEVER.¹

BY

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It is not the purpose of this paper to detail the history of typhoid fever nor to follow too closely its evolution, but to present some general considerations, omitting mention of symptoms or complications the treatment of which is universally conceded, and then tell you the results obtained from measures I have employed during the past three years in hospital and private practice to the exclusion of all others, claiming no originality for the scheme outlined but be-

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ing convinced that it contains elements of advantage not found in other plans of treatment. This presentation is offered in the hope of inducing a full discussion of the whole subject which must at times appeal to us all, whether physicians, surgeons or following special branches of our art. If this be accomplished, my paper will have fulfilled its purpose.

The first step toward scientific or rational treatment must necessarily be a thorough understanding of the etiology, pathology and natural history of the disease under discussion, hence prior to 1840, at about which date typhoid fever was finally differentiated from typhus, cerebro-spinal meningitis, malaria, etc., and its identity and pathology conceded, treatment in any modern sense could scarcely be said to exist. The names of two Americans, Gerhard and Pennoch (1) with those of Stewart (2) and Louis (3) are prominent among those who first accepted and established the identity of typhoid. When in 1880, Eberth discovered the bacillus typhosus, the etiology rested at last upon a firm foundation and treatment could be expected to advance beyond the baldest empiricism. Of the measures in vogue prior to this date and advocated even later, it is enough to say that they proved conclusively the tenacity of human life and the violence which could be done to physiological activity, especially nutrition, without higher mortality than the statistics of this period show.

Diet: Diet constitutes so large a part of the treatment of typhoid and is the feature upon which I desire to lay such special stress, that I shall speak of the other factors first and briefly then give in detail the diet I wish to advocate.

Specific Treatment: I am unable to speak from personal experience regarding

the use of sera or prophylactic vaccines and shall therefore pass over this most interesting field, merely voicing the hope we all entertain that its final outcome may be results as brilliant as those obtained from the use of other antitoxins.

Stimulation: Beyond question one of the greatest advances has been the lessened amount of stimulation, especially alcoholic, administered as a routine. Those of us who were so unfortunate as to have had typhoid under the old regime will, I am sure, never forget the huge and frequently repeated doses of brandy or whiskey poured down our throats, especially if, as in my own case, all water was absolutely prohibited.

The following quotation from Nothnagel's *Encyclopaedia of Medicine* (4) perfectly represents the position then held: "In spite of all theoretic objections, alcoholic beverages are still indispensable to the practitioner in the treatment of typhoid fever, as well as in the treatment of acute febrile diseases in general. It would be superfluous at the present day (1902) to discuss former objections with regard to the influence of alcohol in increasing the fever. Von Ziemssen, Jurgensen and Liebermeister have permanently disposed of this prejudice. Although the theoretic explanation is difficult, practically the stimulating influence of alcohol upon the circulation and respiration is established beyond a doubt. I should be unwilling to treat typhoid patients at all in certain stages and conditions without alcoholics."

Since using the diet I shall mention, stimulation has been needed but rarely and in small doses to meet definite conditions. Alcohol has been practically restricted to those in whom a long continued habit has created a seeming demand, its withdrawal having been followed by either increased

nervous disturbances or marked depression. Strychnine has been my choice in 1/30 gr. doses when plainly required.

Temperature: At some period in the course of practically every case of typhoid, the temperature demands careful treatment, both as indicating the severity of the toxic absorption, with its attendant disturbance of all functional activity, and also because of the consequent increased demands made upon nutrition and nervous resistance. Osler speaks of an afebrile type but admits he never saw such a case. I have seen one in which the maximum temperature was just over 100° F., which ran an otherwise typical course, with subnormal variations. Hydrotherapy in some form is the means now so universally employed to reduce the fever that it is needless here either to argue in its favor as a principle or describe in detail the various modifications adopted to meet individual requirements.

Just a few words I may be allowed in relating the results obtained from the exclusive use of cold rectal irrigations with the Kemp tube in two cases where all other means either failed or were impossible of application. The first time I resorted to this expedient was soon after finishing my interne service at Bellevue, when every private patient really ill caused me the greatest anxiety. This patient, a female aged 22, music teacher, was in a badly depreciated condition, markedly anaemic, with pronounced mitral regurgitation none too well compensated, of which she was perfectly aware and most apprehensive. After trying every form of bath with which I was familiar, all given by a most competent nurse under my personal supervision and all alike either failing utterly to reduce the high temperature and relieve the intense nervous excitement, or else produc-

ing such prostration with cyanosis, irregular and intermittent pulse that on several occasions it was a question whether free stimulation would tide her over, a rectal irrigation was tried as a last resort. By regulating the temperature in the irrigator and making pressure on the outlet tube from the rectum, any variation of temperature and volume of fluid in the rectum could be maintained. After the second repetition the patient experienced the greatest relief and satisfaction and her final recovery was largely due to this expedient. Last summer I again resorted to this method under most trying circumstances. This case was the most desperate I have ever seen; the surgical features were reported to this society by Dr. T. A. Smith last November. After unsatisfactory results from all forms of bathing, ice cold irrigations were employed, lasting at times from one to two hours. None but the happiest results ensued. The temperature was perfectly controlled, and nervous manifestations relieved to such an extent that the patient frequently slept after the first fifteen to twenty minutes. Further advantages may be claimed for these irrigations aside from the obvious flushing of the intestine and the absorption of water into the circulation; they may be safely employed under conditions which contra-indicate the full Brandt bath, cold packs, etc. Cardiac disease or profound functional disturbance, chlorosis, obesity, old age with its attendant arterio-sclerosis or even mild intestinal hemorrhage need not deter one from using carefully regulated irrigations with the Kemp tube. It has been my habit to use the ice coil for the abdomen in all cases showing a tendency to hyperpyrexia in the intervals of more active measures, and I am thoroughly convinced that it has a much more pronounced effect than is generally admitted.

Of antipyretic drugs, I have used none for several years except an occasional dose of aspirin in the cases of typhoid (four in all) treated at the Willard Parker Hospital complicating scarlet fever, or when after a long severe attack complete defervescence has been delayed by what for want of a better term I may call a habit, a few doses of quinine or aspirin have reduced the temperature to normal where it has remained.

Hemorrhage: Ice bags locally with calcium lactate in xx gr. doses every three hours and especial care regarding diet to prevent undue irritation or distension has been our rule. An occasional dose of codeine or even morphine if the patient is restless but never if in pain or presenting any areas of tenderness lest the evidences of perforation be masked. In future I shall try injections of serum, preferably normal horse serum, since it is easily obtained, as the first resource.

Perforation: Perforation demands immediate operation and the brilliant result obtained by Dr. T. A. Smith in the case just referred to proves the advisability of accepting the most desperate chance, since a fatal termination is the only alternative.

Intestinal Antiseptics: The use of intestinal antiseptics from salol to chlorine water with large doses of calomel was the routine procedure during my internship in Bellevue Hospital, and the authority of its advocates made us rather hopeful until a sufficient number of cases had been under observation to warrant the conclusion that until the discovery of some intestinal antiseptic of greater potency or more specific activity, little could be accomplished.

We are all perfectly well aware of the necessity for the greatest care in the choice of rooms, beds, nurses, etc. for our typhoid

patients. The refinements of the modern sick room nowhere count for more and the physician who most successfully meets these requirements will have the best results. Nursing in its broadest meaning must necessarily frequently turn the scale in a disease whose normal duration is four weeks and for which we have no specific.

Diet: All that has been said thus far of treatment is of less importance than the selection of a proper diet. Three years' observation has convinced me that most of our severe cases may be rendered mild by this means and therefore in need of little treatment of any kind. Again quoting from Nothnagel: "Among actual articles of diet, the first place should be given to milk. Theoretically this appears undoubtedly to be the most rational form of nourishment for febrile patients, inasmuch as it represents the ideal combination of proteid, fats, carbohydrates and salts in a liquid form."

This statement represents fairly well the views held by all up to within a comparatively few years. The other articles advocated or permitted were all in addition to milk never regarded as perfect substitutes. I know of but two men who taught otherwise up to three years ago. Text books, systems of medicine, articles culled from current medical literature, even the reading of Dr. Coleman's admirable paper (5) before the American Medical Association brought forward no advocacy of a diet from which milk should be excluded, at the same time increasing its acceptability to the average patient. So impressive was my introduction to this method, that Ward 6 in Bellevue Hospital, as it was when I took up my service three years ago this month, always comes to my mind when typhoid fever is under discussion. From that day

to this no typhoid patient under my care in hospital or private practice has had a drop of milk.

In five consecutive beds were five typhoids ranging in age from adolescence to middle age, and in duration of the disease from early in the first week to convalescence. None had been given milk since admission to the ward. One patient gave the ordinary evidences of a mild attack in his general appearance. Among the others, not a coated tongue, distended abdomen, emaciated body, flushed face or temperature requiring a bath. Mentality was normal in all and several of these patients were complaining of being kept in bed, saying they evidently were not sick since they were being given no medicine. It was difficult to realize they were typhoids and the impression was equally lasting upon those of my friends who visited the ward. Any diet which could produce such results even once was surely worthy of careful trial and while I admit that at no time since has the above picture been perfectly reproduced yet I hope to induce others to test this diet for themselves, and then follow, modify, or abandon as their results indicate.

Do not understand me to say I regard the last word said on diet—by no means, but I do most sincerely believe that a milk-free diet presents advantages over all others yet advocated.

The laboratory work was done by Dr. C. G. L. Wolff in determining the nitrogen balance and nutritive equilibrium in all our typhoids and was, so far as I know, the first time this had been systematically undertaken in determining typhoid diet. His enthusiasm over the results from a purely theoretical standpoint fully equalled that of the clinician.

It was determined to force the diet up to the point of satisfying the nutritive requirements of the patient if this could be done without disturbing the digestive or assimilative functions.

Now let us take the nutritive standards in health as a basis for comparison. Atwater gives 2,700 calories per day for an adult of sedentary habit. Chittenden (6) proved that 3,000 per day was ample to maintain in healthy nutritive equilibrium men doing a considerable amount of muscular work, even when diet and labor were continued for several months. Lower figures have been given but these may be taken as fairly representative.

Now let us see how the diet for typhoid patients compares. How greatly the demands of continual high temperature and the increased katabolism to toxic absorption may affect the nutritive requirements, we do not know but an approximate answer seems to have been made. Coleman gives the following values for the different typhoid diets formerly in vogue. About 300 calories for the starvation diet, 1,400 for the milk diet so long a standard. The tendency toward a more liberal diet of greater variety has been growing ever since 1892 when Peabody published his results. Milk had long been declared to be the only safe and sane diet. I well remember the feeling among the internes at Bellevue when the new diet was proposed and the predictions of disaster freely made by those of the visiting staff who refused to adopt the suggested alterations. When it had been proved that a more liberal diet could be safely employed, the nutritive value was gradually raised, though in many of the proposed changes the proteid equivalent was too high, often producing profound gastro-intestinal dis-

turbances and even albuminuria, yet in no case did the nutritive value go above 2,000 calories per day, about $\frac{2}{3}$ the requirements of health. No wonder our patients emaciated.

To read some of the elaborate menus planned for each week of convalescence as well as of the disease itself found in some of the systems of medicine, while demonstrating the author's profound knowledge of dietetics, and his vivid imagination, could scarcely have found many close followers and would surely have caused dismay in any board of hospital managers if ordered for their patients. The total energy in our diet was calculated by Dr. Wolff to be about 3,500 calories per day with a nitrogen equivalent of about 8 grams, but after the first season I was content to measure the amount needed by the condition of each patient's nutrition and the acceptability of the various articles allowed rather than by exact analyses each day, since it had been proved that such diet, even when forced, produced no real injury—either the patient protested against the amount or at worst had slight gastric disturbance which ceased immediately on reducing the amount.

Rice: Boiled rice formed the basis of our diet. 6 to 8 ounces by volume given at a time. Other cereals have been repeatedly substituted but none were so well borne for so long a period. Theoretically it is the most perfect, being perfectly digested in two hours.

Eggs: Three to six during the day has been my rule, shirred, soft boiled or shaken with sugar, ice and orange or grape fruit juice. A larger number may be employed if for any reason the other articles are reduced. At first only the whites were given in the form of albumin water, but later the whole egg was used with good results.

Gelatine: Gelatine in the form of jellies variously flavored to give pleasing variety is well liked and of great service.

Broths: The various meat broths prepared if possible below the coagulation point of albumin, in order that the maximum of nutrition be retained, furnish proteid for repair of tissue waste and some balance for energy, though it is upon the carbohydrates and fats that we depend.

Bread, etc.: Dried bread, rather than toast, soda crackers, zwieback, etc., are given as the patient desires.

Butter:—Much dependence is placed upon butter and it is well tolerated. During the past year the so-called heavy cream has been used with little if any advantage over butter.

Sugar: It has been my experience that if milk sugar is used alone or in too great proportion, patients object much sooner than if a small percentage of cane sugar is added and no more unpleasant symptoms appear in this latter case.

Our routine has been as follows:

On admission to the ward the patient is given calomel, usually in divided doses, followed by magnesium sulphate. If the temperature is high and the gastro-intestinal tract in bad condition, little besides water is given for 24 hours.

The patient is fed every $2\frac{1}{2}$ to 3 hours, being given 6 to 8 oz. of rice with butter and sugar, alternating with an equal quantity of jelly often with sugar, eggs or broth. Sugar is added to the eggs with fruit juice; butter when shirred or boiled. Butter is usually given with the dried bread, crackers, etc., which are served with broth and eggs.

Water is urged upon the patient throughout the course of the disease, nurses being instructed to watch the amount taken. Often the total fluids are entered on the

chart in order that the intake and output may be watched.

Hydrochloric acid, largely diluted, is given if the digestion seems to flag, the diet being altered at the same time.

Nurses are always instructed to see that the patients eat slowly and thoroughly masticate their food (of course if rational). Much less objection is raised to this diet than when milk constitutes a large element and by varying the sequence and not crowding the diet at first, the patients are far better satisfied. We rarely hear the complaint of "nothing to eat." Under this plan patients exhibit far less prostration; their faces lack the dusky flush so characteristic of the disease; the tongue becomes moist and clean, or slightly coated at the base only; no tympanites or marked diarrhoea, except in rare cases and they run a much milder course in every way, showing the effects of a full, easily digested diet.

Seventy cases have been treated in hospital with seven deaths and seven in private practice all recovering. The hospital figures are in themselves anything but flattering, but analyzing them, I am fairly entitled to say "there's a reason." Two died from pneumonia and delirium tremens within seven days after admission. Two from hemorrhage within 48 hours after reaching the hospital, one had a perforation also. The other was brought to us moribund because of repeated hemorrhages at home. One with history of recent syphilis and marked alcoholism. Autopsy showed advanced parenchymatous nephritis. One woman with peripheral neuritis, marked prostration and cyanosis on admission. Of the six, none lived beyond the tenth day. The seventh death is fairly chargeable to our record, being caused by profound

toxaemia, after a long severe illness.
11 East 48th St., New York.

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A CASE OF ACROMEGALY.¹

BY

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The patient whose picture I show you is 36 years of age, seamstress, American. Her



Patient at age of 27.

family history is negative. Menstruation which began at 13 years of age, and which

¹Case shown to Clinical Society of N. Y. Polyclinic Hospital and Medical School.

was regular, stopped, according to her story, suddenly at 26 years of age.

Immediately after, that is, ten years ago, she began to suffer from frontal headaches and indefinite pains over her entire body.

enormous. The weight at present time is 185 pounds. She speaks slowly in a marked guttural manner. The ears are rather larger than normal and measurements from the symphysis of the jaw to the angle is 14



Picture taken 3 months ago. Front view.

Concomitant with this she complained of general weakness, inability to do her work with the same ambition, night and day sweats.

She was constantly thirsty, drinking from 3 to 5 quarts of water and her appetite was

cm. in contrast to 10 cm. of a normal individual. The nose is large and broad and her eyes are protruding with some exophthalmos. The malar bones are exaggerated, completing the picture of "Punch" which has been given to these cases by an eminent neurologist.

The ocular examination has been entirely negative. Her tongue is enlarged and the incisor teeth are separated fully one-half inch, which is often found in these cases. The thyroid is enlarged, but no thymus was

the ulnar side of the hand being thickened, and she now wears a man's glove, No. 9. Her shoes which were at 25, size 5 are now ten and her heel projects backward, her arch is broken and the tendo-achilles enlarged.



Picture taken 3 months ago. Side view.

demonstrated. As you note in the picture the thoracic cage is considerably increased on account of the ribs being broadened. The patient now has a marked lordokyphosis with a scoliosis. The hands are enlarged, fingers as well as the nails are broadened especially

In other words the woman shows a general thickening of the soft parts as well as the bones.

The urine is normal; no albumin, no sugar. The blood pressure is 185 with some hypertrophy of the heart but no mur-

murs. The X-Ray was not able to demonstrate any tumor of the hypophysis.

Treatment with extracts of hypophysis or thyroid have been of no avail.

203 W. 79th St., New York.

ETIOLOGY AND DIAGNOSIS.

The Early Diagnosis of Uterine Cancer.¹—The early diagnosis of cancer of the uterus is one of the most important functions of the family physician, according to Hendrick, for it is to him the patient usually appeals for relief, hence it is his bounden duty by every means available to make the diagnosis if possible. There are three sites for uterine cancer.

1. The vaginal portion from the vaginal vault to external os.

2. The cervical portion from the external to the internal os.

3. The uterine body from the internal os to the tubal orifices.

Now, cancer of the uterus develops in its mucous membrane, or immediately under the mucous membrane of its elements. That is, the glands of the cervix or the body. This classification is important because, not only the clinical picture of the cancer but the methods of diagnosis are quite different, depending on the starting point and extension of the disease.

There are certain symptoms which one may designate by the name of prodromes of uterine cancer. These are:

1. Bleeding in coitus—due either to engorgement or friction. It is very common, and often the first symptom noted in cancer of the cervix, though it may occur in vascular erosion, endometritis or polyps. It is always a suspicious sign.

2. Metrorrhagia—after the menopause; that is, some months after the menopause. This symptom may occur in fibroids and polypoid disease, but it is most often due to cancer. Irregular hemorrhages before the menopause are not so suspicious, but we must bear in mind the age incidence.

3. A sero-sanguinous discharge resembling greasy dish-water or beef brine occurs in the very early stages of cancer

of the cervix, and is rare in other conditions. This modified cervical discharge is characteristic.

Clinical Diagnosis.—The clinical diagnosis of uterine cancer depends upon two factors:

1. The presence of a neoplasm, either proliferation or infiltration.

2. Its degeneration. This leads to the characteristic friability of the tissue which is of great diagnostic value. This friability is recognized by the finger or the sound. This property of breaking up into small pieces under pressure of the finger is very characteristic, and the only other tissues, perhaps, showing it is a necrosing fibroid.

The great tendency to bleed is understood when one recalls the histological structure. Hence, bleeding is characteristic of all three varieties of uterine cancer. But one finds hemorrhages in erosions, endometritis, chronic metritis and polyps, although less, so that diagnosis cannot be based on bleeding alone. When both features of cancer are present, namely, neoplasm and degeneration, the diagnosis is easy, but if only one of these is present difficulty arises. For examples, there may be only proliferation, then inspection with speculum aids, while any infiltration is found on palpation, whilst degeneration is found by both methods.

Cancer of the vaginal portion may be seen and felt through the speculum in the Sims posture, whilst palpation of body cancer may require dilatation.

Vaginal Portion.—Cancer here is the most easily diagnosed of all sites.

1. If of the polypoid variety its surface is reddish in color and friable; that is, easily broken or crumbled down by finger or sound.

2. If of the flat kind, any bulging above the surface is suspicious.

3. If of the infiltrating kind, a nodule is felt cartilaginous in consistence and altering the shape of the vaginal portion. If, however, the mucous membrane over the lump is intact then there is trouble, though the surface of the nodule may be purple in color and spotted by yellow pits due to the cancer nests.

4. Ulcerating cancers are easily spotted. The jagged fissures with soapy secretion,

¹A. C. Hendrick, M. D., *Canada Lancet*, Sept., 1910.

or reddish in color, with moderate induration, are quite characteristic, but often the microscope has to decide.

Differential Diagnosis.—The polypoid variety from:

1. Papillary tuberculosis may be made by careful inspection, finding the millet seed nodules or tubercle in the neighborhood. For example, the tubes, peritoneum or a focus in other organs.

2. From mucous polyps. Inspection shows the surface mucous membrane intact, and the sound that they originate in the cervix.

3. Cervical fibroids with the pedicle is distinguished by its intact mucous membrane and nonfriability, unless gangrenous.

4. Follicular hypertrophy of the vaginal surface. Here the surface is not rough, the tumor is not friable, and it is covered by intact mucous membrane through which the follicles may be seen.

5. Condylomata acuminata. Here there is only a papillary surface with thick epithelium, no ulceration or infiltration. The color is a whitish red. Further condylomata may be found also in the vagina or vulva.

Infiltrating Variety.—The differential diagnosis from:

1. Inflammatory infections — metritis colli, but inflammation usually affects the whole vaginal portion uniformly. The consistency is not so hard, the mucous membrane is intact and follicles are seen. For example, a case in hospital the microscope decided.

Flat Cancerous Ulcerations.—Flat cancerous ulcerations have to be distinguished from:

1. Erosions, if developed upon a hard inflammatory base, or associated with ectropion, or the surface becomes rough on account of thick papillary erosions. Inspection decides; an erosion surrounds the external os evenly and has a glistening shiny appearance and bright red color, as it is covered by columnar epithelium, whilst a cancer is duller in color and rougher, even if ulceration is quite superficial. The erosion has no sharp border, but merges gradually into the squamous epithelium of the vaginal portion—outline irregular and pits or follicular ulcers are often seen on

the surface. But if the erosion has lost its epithelium the microscope decides.

2. Simple ulcers: Due to prolapse or a pessary or cauterization or croupous processes, lack induration and at the borders healing is often seen.

3. A tubercular ulcer is similar to cancer but is very rare. It surrounds the external os. Its edges are undermined, the floor is granular but not indurated, yellow miliary tubercles may be seen. Also the disease is found elsewhere or the microscope shows a tubercle structure.

4. Chancroids (soft sore): Are usually small sores, becoming larger by confluence, have elevated borders, the floor has a croupous membrane but is not indurated. Ulcers are multiple and contact ulcers are found. Also ulcers on the vagina or vulva.

5. Syphilitic Ulcers:

(a) Initial lesion.

(b) Degenerative papule.

(c) Gumma.

Degenerative papule is a solitary indurated and shallow ulcer, with indistinct border and dirty copper red color, with greasy exudate on its floor. The anterior lip is the favorite site.

6. Condylomata lata, or papulous ulcers, are elevated slightly and covered by a yellowish debris. They are multiple and other papules may be found on the vulva.

7. Gummata—are rare. The ulcers are elliptical, well-defined, shallow, and the floor covered by a pus-like exudate, which on separation leaves bleeding granulations. It is situated usually to one side of the external os, and extends by serpiginous border. One may demonstrate the lesion elsewhere, also the Wasserman reaction or the presence of spirochaete may be shown.

Diagnosis of Cervical Cancer.—This is more difficult, especially if the os is closed, but otherwise when the os is patulous. Then ulceration, the absence of epithelium and especially friability on scraping with the curette is diagnostic.

Infiltrating Cancer.—Here diagnosis depends on change in shape of the cervix and its consistency. The surface becomes distended on one side, perhaps, and the canal displaced. Its consistency is cartilaginous. If infiltration is high up in the cervix a rectal examination may help, but

the best plan is to remove a piece of tissue with the curette and examine histologically, or even to curette the body as well as the cervix and *vice versa*.

Differential Diagnosis.—1. Metritis or endocervitis, but here the condition is uniform and the mucous membrane is intact.

2. Follicular hypertrophy, but here the mucous membrane is intact and the follicles shining through may be punctured.

3. Interstitial myomata, are more rounded; that is, better outlined and surrounded by soft tissue, while cancer owing to inflammatory reaction is not. Ulceration favors cancer.

4. Chronic cervical catarrh, in old females. Here the mucous membrane feels rough, uneven and nodular owing to the granular depression and the surrounding fibrosis, but the mucous membrane is intact and the curette gets no tissue. The microscope decides.

Cancer of the Uterine Body.—Cancer occurs here about one-fifteenth as often as in the cervix, but is very important to diagnose, since most corporeal cancers arise after the menopause. Hence, there are two important signs:

1. Hemorrhages.
2. Simpson's pains, regular labor-like pains, lasting several hours and recurring at definite times of the day.

But there are no characteristic bi-manual palpatory findings in cancer of the body. The size of the uterus may be normal or even atrophic. Later it may resemble a fibroid or metritic uterus. Diagnosis is made by exploring the cavity.

1. By the sound which distinguishes from retained desidua or fungus endometritis, by presence of hard nodules or depressions when cancer is present. If the interior seems smooth cancer may be excluded, but if there are irregularities of the surface the microscope is necessary. The microscope is the proper method of diagnosing early cancer of the body. Digital exploration may be employed if the os is open plus curettage, but if the cervix is closed curettage is employed, and if negative digital exploration is then used, but the latter is more dangerous, besides palpation is not so sure as the microscope.

Differential Diagnosis.—If the curette is used the microscope decides; if a digital exploration then one has to distinguish from:

1. Adenomyoma.
2. Sarcoma.
3. Degenerating fibroid.
4. Mucous polyps.
5. Remains of abortions.
6. Chronic Metritis.

But cancer is distinguished by the two signs of neoplasm and degeneration.

Although corporeal cancer occurs only about one-fifteenth as often as the other varieties, still it is more insidious in its mode of onset. It is more frequent in spinsters and in barren wives than in multipara. This corresponds with the clinical experience that it is frequently associated with fibroids, and fibroids are a result of the barren or the celibate state. It is interesting to note that cancer of the body of the uterus has been found to follow double ovariectomy, and since this is practiced occasionally for bleeding fibroids near the menopause is worth remembering.

Again, sub-mucous fibroids are often associated with changes in the endometrium which not only cause excessive bleeding but set up also inflammatory conditions, giving rise to salpingitis, leucorrhoea, etc., but also render the mucous membrane more susceptible to cancer.

Bland-Sutton (*Burghard's System of Surgery*, Vol. 4, p. 52) states that in patients submitted to hysterectomy for fibroids, over the age of fifty years, about ten per cent. will be found to have cancer of the corporeal endometrium.

Hence, one may sum up the early diagnosis of uterine cancer by stating that:

1. The family history is important in discovering a predisposition.

2. The personal history is important in deciding a predisposition. For example, cervical cancer is almost exclusively a disease of women who have borne children, or at least been pregnant. Hence, there seems good reason to suppose that injuries and their sequelæ are predisposing factors. Again, corporeal cancer is chiefly the disease of spinsters and barren wives, and these are the patients who suffer from endometritis and fibroids.

3. Chronic irritations are important etiological factors. For example, lacerations in multipara, fibroids, and endometritis in nullipara.

4. The warnings or prodromes are:

1. The red flag of metrorrhagia after the menopause and the Simpson pains in corporeal cancer.

2. The unusual discharge in cervical cancer.

3. The bleeding after coitus in the vaginal variety.

A rapid and delicate method of detecting bile pigment in urine.¹—The best known methods of detecting bile pigments in the urine depend upon the fact that oxidation leads to the production of pigments of different colors; the commonest is that with fuming nitric acid—Gmelin's test. It is well enough known, however, that even in cases of distinct jaundice it may be difficult to get a positive reaction for bile pigments in the urine, and if this is so in patients who are already known to be jaundiced it is still more likely to be so in those slighter cases in which incipient jaundice is suspected but in which there is some doubt. Macadie has described a method of detecting them which is both rapid and more delicate than most other tests. It depends, like most others, on the extraction of bilirubin, and the production of a series of colors. It has the advantage that the amount of oxidation may be regulated and prevented from going so far as to pass through the green stage of biliverdin to the yellow or indeterminate stage of choletelin. About 10 c. c. of urine is acidulated with acetic acid, shaken up well, and to it is added enough of a clear saturated solution of calcium chloride to precipitate the bulk of the urates. The specimen is centrifugalised well, the supernatant liquid is decanted from the sediment, the latter is rinsed with a few drops of water, which is again decanted off and the precipitate left as well drained as possible. The greater part of the bile pigment that was present in the 10 cubic centimetres of urine has been carried down by the precipitated urates. To the latter 5 or 6 cubic centimetres of Macadie's reagent are now added; this consists of one part of hydro-

chloric acid of specific gravity 1.16 and three parts of rectified spirit of wine. On stirring with a glass rod the urate precipitate dissolves to a more or less clear solution on to the surface of which five or six drops of nitric acid of specific gravity 1.12 are allowed to trickle down the side of the tube. The liquid rapidly assumes a series of colors precisely similar to that of Gmelin's test. At the bottom of the liquid and next to the nitric acid is a yellow layer, above that a wine-red layer, above that a blue layer, above that a bluish-green layer, and above that a green layer. Care should be taken not to shake up the liquid. When bile pigment is present in any quantity the appearance is almost like that of a spectrum. The layers of different colors are not in such close proximity as they are in Gmelin's test, and Macadie states they are therefore much more easily recognised. In doubtful cases, especially when the urine is being tested in a laboratory, the traces of bile pigment from a pint of urine can be collected in quite a small urate precipitate, and this makes the test a very delicate one. With the aid of a centrifugal machine the procedure can be carried out in less than five minutes, and it is not influenced by urobilin, blood pigments, or indican.

The danger of misinterpreting the brown color produced when the nitric acid is employed is considerable in practice, and the importance of avoiding this source of error is great. The only difficulty that might arise in connection with Macadie's test would be if calcium chloride did not give a precipitate of urates. This must be a rare occurrence, but when it arises one drop of caustic soda solution may be added to the mixture of calcium chloride and urine so as to get a phosphatic instead of a uratic precipitate. The process may then be continued in precisely the same manner as above and the reaction obtained as before.

TREATMENT.

The Treatment of Wounds with Alcohol.¹—The treatment recommended by Bahnson is very simple and embraces only two principles. "First, absolute rest of the

¹The Hospital, Sept. 10, 1910.

¹H. T. Bahnson, M. D., Winston-Salem, N. C., *Int. Jour. of Surgery*, Sept., 1910.

affected limb, which includes the scrupulous avoidance of all manipulation, palpation or prodding of infiltrated areas by the surgeon's fingers, and second, the enveloping of the whole limb in a loose, voluminous dressing of gauze and absorbent cotton, which is kept constantly wet with a fluid consisting of one part of alcohol to four or six parts of a saturated solution of boric acid, to which Dr. Ochsner adds one part of 5 per cent. carbolic acid solution. This dressing is covered carefully with some impervious material to retain warmth and prevent evaporation. The warm fluid is poured on as often as necessary to keep the whole dressing wet—not merely damp—and the dressing is renewed in forty-eight hours. This second dressing is usually sufficient to entirely overcome the sepsis. Under this treatment the position of the limb can be shifted as desired, and the comfort of the patient leaves a comparison with any other plan entirely out of the question.

A word as to the strength of alcohol used. In the above you will note it is only 15 to 20 per cent. Ordinarily I employ it half strength, but where I think the case demands it I use pure alcohol, and always with good results.

For the preparation of the operative field in my hospital work I conform strictly to the standard technic, although I doubt the necessity or efficacy of the ten minutes scrubbing with green soap, which leaves the skin soggy and waterlogged—a condition which is fortunately corrected to a great extent by the final douching with alcohol.

Very recently Grossich and Walther have demonstrated that the field of operation is made perfectly sterile by dry-shaving and painting with tincture of iodine. It is also proved by experiment that alcohol penetrates the deeper layers of the skin and destroys, or permanently inhibits, saprophytic and pathogenic bacteria."

The Treatment of Varicose Ulcer.¹—

According to Coplan, rest for the limb is essential; if possible place the patient in the recumbent position and elevate the affected

limb, not only until the ulcer is closed but until the scar becomes sufficiently resistant. If the patient cannot afford so much time, the recumbent posture for even a short period will decrease the severity of the case, diminish the ulcerated surface and make it yield to treatment more readily. An elastic stocking should be ordered at once and the patient made to wear it whenever he is on his feet. Those who cannot remain in bed all the time on account of their work should be advised to stand as little as possible and to stay in bed on Sundays, holidays, or whenever possible. This advice is readily accepted and it has proved very beneficial in many cases.

Rubber or any other kind of bandages are much inferior to the elastic stocking, and Coplan has never seen a patient who could apply the bandage properly, it is either too tight, or too loose and it does not accomplish much.

The treatment of the ulcer itself consists in thorough antisepsis of the wound and surrounding skin, procured by first washing the entire leg with soap and water and then with 1-1000 bichlorid solution, or a saturated solution of boric acid; brushing the ulcer with carbolic acid, then covering it with cotton dipped in alcohol, drying it carefully and dusting on quite thickly bismuth subnitrate and starch powder, in equal amounts, and a dressing consisting of a small pad is held by a gauze bandage or by small strips of adhesive plaster. The elastic stocking is then put on.

The powder is changed every morning by the patient, the wound is washed once every two or three days as stated above, inspected, and if necessary, the carbolic acid and alcohol application is again made and the powder reapplied.

The indications for the carbolic acid and alcohol applications are when the retrograde changes equal the reparative, or when the former exceed the latter. When the surface of the ulcer is covered with a layer of healthy granulation tissue composed of round cells closely packed together and supplied with a rich capillary network of blood vessels, the above treatment is all that is necessary.

If the granulations are irregular, unhealthy, protruding above the edges of the wound, with ill smelling, purulent or sero-

¹M. Coplan, M. D., *Cleveland Med. Jour.*, Sept., 1910.

purulent discharges, the surface should be curetted thoroughly before the above applications are made.

GENERAL TOPICS.

The Difference Between a Sanitarium and a Sanatorium.—The words "sanitarium" and "sanatorium" are popularly understood to have the same meaning and are generally used interchangeably, says the *Scientific American*, when designating (or describing) places of refuge for sick people, but there is, in fact, quite a distinction between the meaning of the two words. In answer to a correspondent on this subject the Literary Digest says:

"The distinction between these words lies in the fact that they are derived from two different Latin roots. 'Sanatorium' is derived from the late Latin *sanatorius*, meaning *health-giving*. The term relates specially to 'an institution for treatment of disease or care of invalids; especially an establishment employing natural therapeutic agents or conditions peculiar to the locality, or some specific treatment, or treating particular diseases.' On the other hand, 'sanitarium' is derived from the Latin *sanitas*, from *sanus*, meaning *whole*, or *sound*. 'Sanitarium' relates more specifically to 'a place where the hygienic conditions are preservative of health, as distinguished from one where therapeutic agencies are employed.' Hence it is the province of a 'sanitarium' to preserve health, that of a 'sanatorium' to restore it. Care should be exercised in combining the proper vowels in these two words, in order to indicate correctly the derivation."

Pipe, Cigarette and Cigar.¹—The question as to which of the three forms of smoking, the pipe, the cigarette, or the cigar, introduces the greatest proportion of nicotine into the smoker's system has never obtained a completely decisive answer, although it has received considerable discussion from time to time. At one time it was freely asserted that the tobacco which contained the highest amount of nicotine necessarily tended to be the most injurious, no matter in what form it was smoked, but

now we know that the form of smoking plays an important part. There was a theory that not in all three cases was the original nicotine in the tobacco conveyed as such to the mouth; sometimes it was destroyed by effective combustion, while at other times pyridine was responsible for toxic effects. According to this theory, which was all on the right track, the cigarette was least harmful, because the tobacco along the thin paper wrapper was exposed freely to the air, and as a consequence the tobacco was well burnt and all nicotine was destroyed. Against this it was held that in such a case one poison disappeared only for another one to be elaborated, and carbon monoxide was found in marked quantity as a poisonous constituent of cigarette smoke. As a matter of fact, carbon monoxide is invariably found in all tobacco smoke, and that circumstance should be sufficient to warn all smokers against inhaling it persistently. Theories as to what happens in the combustion of tobacco in the various ways it is smoked next took into account the extent to which condensation products were formed and retained in the tobacco. The most effective condenser, of course, is the pipe, and there can be little doubt that owing to the length of the stem a comparatively small proportion of these condensation products reaches the mouth. In the cigar, on the contrary, the condensing process has a tendency to travel throughout the cigar; at all events, as the cigar gets shorter the condensed product area gradually reaches the mouth and eventually the products are conveyed there by the heat of the burning end. It has been said by connoisseurs that no cigar is worth smoking after one-half of it has been consumed, which seems to be a practical realization of theoretical considerations very suitable for application by millionaires. Again, a cigar that has been partially smoked and then allowed to go out is decidedly unpleasant when re-lit, owing doubtless to the spread of condensation products to the mouth end. In the case of the pipe, the burning area is always in the same place; it never comes nearer the mouth, and therefore the probability is that the condensation products do not reach the mouth in, at any rate, appreciable quantities. In the cigarette the condensation products eventually reach the mouth, but there is in this case less chance

¹London Lancet.

of condensation products forming, since the combination is unhampered, the tobacco being freely in contact with the air. The question of moisture, however, must not be left out in these considerations, for it is obvious that damp tobacco will form condensation products more readily than dry tobacco. It is probable, therefore, that a dry cigar or cigarette gives off less poisonous products than a damp one does, but not everyone smokes from choice a new cigar or an old cigarette. It is reasonable to conclude that the amount of nicotine reaching the mouth does not necessarily depend on the amount in the tobacco, but on the form in which it is smoked. In drawing this conclusion regard must, of course, be had to the quantity of tobacco smoked, but if the conclusion is correct, the pipe would come first as the least harmful form of tobacco smoking, then the cigarette and lastly the cigar.

THERAPEUTIC NOTES.

Some Further Data Concerning Ehrlich's New Arsenic Preparation.¹—At the Hospital zum Heiligen Geist, Frankfort-on-Main, Professor Treupel gave a report of 500 cases of syphilis treated with "preparation 606" during the half-year. From long distances people are streaming to Frankfort for treatment by the new method. The speaker laid stress on the painfulness of the treatment, and observed that patients had to be kept in bed for at least a week to a fortnight. It was very difficult to dissolve the powder; the fresh made solution alone was to be made use of; it must be used at once. This was ground enough for limiting the use at first to the Klinik. Tuberculosis was not a contra-indication as regarded its employment. The specific action was indubitable and directly striking; plaques, etc., frequently disappeared in a couple of days. Bye-effects independent of the local one, when the injections were made into the muscle, were quite absent.

Professor Neisser, according to the *Deutsche Med. Zeitung*, is firmly convinced of the efficacy of the remedy in every way. In quite fresh cases there is a possibility of stifling the germs of the

disease, and of bringing old ulcerous cases to heal more quickly than by mercury plus iodide. In many cases a long and tedious course of inunctions was replaced by a single dose of the remedy. A repetition was not called for in all cases. Then there are all that group of cases in which mercury is not applicable, through idiosyncrasy or otherwise. He, however, recommends the general surgeon to wait until the difficulties of solution are overcome, and uncertainty as regards dose are cleared up before venturing on the employment of the potent drug himself.

Dr. Alexandra Glück reports on 109 cases in the Dermatological Department of the Landesspital, Sarajeow. The injections were complained of as being painful, but the painfulness varied very much according to the individual; the rise of temperature was only slight; there were rashes in the form of urticarias and erythema, but no serious disturbances in any case. The lung mischief was never made worse in consumptive cases; the action was rather favorable both as regarded the chest disease and the syphilis (disappearance of catarrh, and tendency to cough). In six cases of initial sclerosis without general symptoms, the course was uniform. There was an apparent want of success in a case of chancre of the lip. Eight maculo-papulous syphilides went out without a trace. In one case of syphilitic lichen the scaliness went off the second day, and the patient was discharged a week after the injection. A favorable result was obtained in fourteen cases in which the vox syphilitica was present. In twenty-seven cases of redness of the fauces the redness rapidly disappeared. There was also rapid disappearance of plaques on the tongue, tonsils, soft palate, efflorescences of the tongue, lips, mouth, and mucous surface of the fauces. The curative process was very rapid in cases of papilloma of the scrotum and penis, those of the anus were more resistant, as also were those of the female genital organs.

In some cases in which unpleasantness—to say the least—was experienced (Drs. Bohac and Sobotka) Prof. Ehrlich is of opinion that there must have been some error in the manufacture of the preparation.

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American Medicine

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The psychology of the consumptive has always occupied a good bit of professional attention, but until a few years ago we were mostly concerned with the overwhelming optimism of the patient, who even when dying, would be convinced of ultimate recovery and lay plans accordingly. They frequently deceived their friends as well as themselves and—what is far worse—often deceived the attending physician. The saddest parts of medical history are the accounts of improvement or cure under special treatment whereas the cases were actually getting worse and the symptoms were concealed by the increasing toxæmia. Under such conditions, other patients have been induced to undergo similar treatment to their own undoing. Dr. Maurice Fishberg of New York City (*N. Y. Med. Rec.*, Apr. 16, 1910) is inclined to believe that there is a special psychic state characteristic of tuberculosis and not found in other infections. On the other hand, there are many capable observers who cannot find anything special to this infection, but who think that every mental abnormality is duplicated wherever there is such profound neurasthenia as that which almost invariably results from any long exhaustive process—the introspection, the emotionalism, the intense selfishness which sacrifices friends and relatives, and the impaired responsibility which is even considered of sufficient importance to be a valid defense for certain

crimes, and a warrant for segregation of all who show anti-social tendencies.

The suggestibility of consumptives is the main point brought out by these modern studies, and one which is being put to good use in treatment though not nearly to the extent it should. Given any neurasthenic who is also suffering from an intoxication closely resembling that due to alcohol, we will find the mental defenses down so that any idea can be forced in and almost obsess the patient. A host of degraded quacks have long flourished because they make suggestions which are appropriated by the consumptive, and moreover the advertisements are so palpably absurd that healthy laymen are astounded that anyone can possibly be deceived and are therefore utterly unaware of the damage done to the poor consumptive who grasps at the promises as a drowning man at straws. Successful practitioners owe many of their cures in every disease to their ability to impress their patients, but in tuberculosis this “confidence in the doctor” is of supreme value if we wish the patient to do what is beneficial and avoid the countersuggestions of quacks. A mere hint thrown out at the psychologic moment may save a man, by preventing his departure for some cure-all climate where he will promptly perish. By all means, therefore, let us take advantage of the patient’s suggestibility to keep him

in the narrow therapeutic path until he regains sufficient control to keep there.

The unreliability of consumptives is another matter of therapeutic as well as medico-legal importance. In advanced cases actual delusions appear, and, what is most amazing, a species of homicidal mania in which they deliberately expectorate indiscriminately with the intention of infecting others, even their families. There is no question as to the necessity of segregating these cases, but in the milder forms of alienation of the earlier stages, it is utterly out of question. What concerns us as practitioners is the interpretation of the patient's statements so as to get at the real facts which he perceives so dimly or distorted. It is not only necessary in diagnosis but in determining the effects of treatment, we must learn to distinguish how much of the improvement is due to suggestion, for Fishberg quotes many observers to the effect that suggestion alone often accomplishes great good or evil as the case may be. The vogue of drugs may be checked, if we realize how useless are many of the things which at one time or another gave fictitious and even factitious results from suggestion. In no other disease are the discrepant professional opinions, and results of treatment so dependent upon the psychology of both patient and doctor. It is high time to take note of the matter. Perhaps we are in a position now where we can unravel the absurdly conflicting reports as to the value of climate.

The transmission of typhus by body lice now seems proved by the experiments of Nicolle in Europe and of the late Dr. H. T. Ricketts and Dr. Wilder (*Jour. Am. Med. Ass'n.*, April 16, 1910), in Mexico with the fever called *tabardillo* which is

similar to if not identical with old world typhus. Whether or not the insect is the only medium is yet to be proved but it is significant that the monkeys used in the experiments sometime failed to contract the disease from others directly, as though it were not contagious—an observation of prime importance, for if confirmed by later crucial experiments, it means that one more scourge of mankind is susceptible of control. It has long been an article of faith that defective nutrition was the basic cause of loss of immunity as in the old overcrowded jails and sailing ships, but it may have been due to insanitary conditions permitting growth of vermin which then carried the disease to everyone should one louse-ridden case be introduced and that diet had no more effect than in any other infection. In modern sanitary jails the disease has practically disappeared, but when it is found it never shows the old tendency to become epidemic, as though cases were harmless if kept free of vermin, in the same way that yellow fever is harmless if kept from mosquito contact.

The dangers of biting or sucking insects are once more brought to attention by these experiments with *pediculi vestimenti*. Whether the louse is a mere mechanical transmitter or a biological one in which the pathogenic organism undergoes a transformation, is not yet settled, but from a sanitary point it is immaterial how it carries the disease. We know that it must now be classed with the bed-bug as a proved potential enemy, always ready to infect us, if it should become infected. Again has the gospel of cleanliness been confirmed. It seems that it will eventually be possible to avoid most infections, even if we cannot destroy them, and in addition the number of foci is thus being reduced

so that the chances of meeting an infection are continually growing less. A person with vermin of any kind is thus found to be a public enemy, and one more reason is added to the thousand others for the installation of public bathing facilities for those unable to rent them in their homes. In the perfect civilization of the immensely distant future, a dirty person will be arrested as a nuisance, and if he will not keep clean, he will be segregated like a leper. Is it too soon to take a tiny step in that direction for our self-preservation?

The segregation of all infections comes up for renewed discussion with every addition to our knowledge of the manner in which disease is carried from one case to another. Of course it is so utterly impractical at present, that it is a foolish waste of time to discuss compulsory measures, but we can do an immense amount of good by the means we adopt in family practice. It is indeed a duty to our fellows to harp upon the fact that every case will spread disease and that the well must keep from contact and that when convalescent the man himself must avoid contact with others for a longer or shorter interval. After a very very long campaign of education, public opinion will demand legal restrictions which would now be resented as unwarrantable interferences with our democratic personal liberty to kill as many of our neighbors as we please. The certainty of avoiding smallpox by vaccination has started a movement against segregation in that disease on the ground of its being a useless expense. The claim is made that the time has now come in which each person should be immune, and if he elects to run the risk, it is his own funeral. But in all diseases even if we can acquire an immunity, we have a right to

call on society to protect us from known dangers we cannot avoid while at our daily tasks. We can't vaccinate against everything. So let us make these newly discovered dangers common knowledge, and consider ourselves public teachers to the end that we will lessen the number of "carriers."

The dangers of overwork are not sufficiently well known, even in the medical profession itself and it is necessary to call attention to the matter to prevent the deplorable deaths of men who can ill be spared. Most of the cases of exhaustion and loss of resistance are doubtless due to defective nutrition, either from improper food or disorders of digestion and assimilation. Although the number who deliberately run themselves to death is very small, yet they stand out prominently because they are the "workers." Ordinary folks are more liable to rust out than wear out and there is no need to warn them as to the benefits of vacations, indeed most of them would be better off physically as well as financially if they were a bit more strenuous. Three recent deaths have been widely commented upon as avoidable if the deceased had not overworked. The late King Edward is said to have had chronic emphysema and bronchitis with considerable tissue change which interfered seriously with the pulmonary circulation. His heart was amply strong for the work under ordinary circumstances but he insisted upon being up and at work on State affairs when he might just as well have been in bed for a day or two. His heart was not strong enough for this extra strain and his career was thus prematurely ended at a critical time when the world needed him the most. He had developed such a genius

for preventing nations flying at each others' throats that he well deserves the title of peacemaker. What a pity he did not know of the dangers of overstrain due to overwork.

Infection from laundries, money and postage stamps seems to worry a few people unnecessarily, for as a matter of fact there is remarkably little evidence of disease so transmitted. Some one has been alarming us because he found a few bacteria on gummed postage stamps, though he should have been astonished if he had not found them. Some years ago an investigator reported that he had found many cigarmakers, with mucous patches in their mouths, who were moistening the cigar ends with saliva. He too spread alarm, but as no cases of syphilis from cigars were known, smokers went calmly on regardless. We now know that the infecting organism of syphilis perishes very quickly. Postage stamps seem to be just as harmless though of course no one wants to put them in his mouth immediately after they have been handled by the dirty fingers of someone else, even if the germs so deposited are dead as door nails. In the same way common sense tells us not to put dirty money in the mouth, for it may have recently been tucked away in a very dirty place, yet its germs too are mostly dead and we can lay very little disease to its agency. Its evils are of another sort. Our clothing is boiled in the laundry and even if pus-soaked it does not spread infection. Ironing also kills some organisms though not nearly so many as we once thought, as the temperature of the fabric is not sufficiently raised in the process.

Bacterio-phobia seems to be at the root of the present dread of things we must handle daily. These sufferers should be informed that for thousands of years we have been constantly bombarded with living germs and by the ordinary laws of adaptation we have evolved defenses. Moreover, we cannot possibly avoid all these enemies, even in the air we breathe. This is not a plea for filth. Common sense as well as decency and good taste dictate that we should avoid as many sources of infection as possible,—even the least of them,—and we must insist upon having clean clerks with clean hands, clean stamps, clean money, clean bread, clean clothes, clean barber shops and clean restaurants, but the point to enlarge upon is this,—we get diseases from diseased people as a rule and not from infected things. Bacterio-phobia is blinding us to the real dangers,—the living carriers. Instead of objecting to the crusade for cleanliness we have been preaching it, but we think that so much attention to fomites is misdirected. We know of many serious skin infections transmitted from face to face by barbers, and it is certain that a dusty day in a city fills the mouths of people with virulent organisms. In these directions it is necessary to continue the crusade for there we find vital defects. The other dangers mentioned, though real and in need of remedy, are greatly exaggerated.

Interest in Ehrlich's "606" continues and the reports that are accumulating from many critical and conscientious observers go far to support the main contentions of the discoverer. At the same time, enough untoward and alarming results have been

described to emphasize the fact that much still remains to be learned concerning this powerful remedy. Caution and conservatism are highly desirable in taking up its use, and valuable as it may prove to be when its proper dosage and methods of administration are fully determined, it should be remembered that premature enthusiasm has too often placed a needless handicap on products of real worth and merit.

In the present instance, the attitude of certain American physicians will hardly react to the credit of the profession. Taking advantage of the enormous free advertising which this new arsenic preparation has received, they have shown themselves to be opportunists of the most sordid kind. Up to the present time, every bit of "606" available for use in this country has come through Professor Ehrlich's generosity. In his commendable effort to secure the widest possible clinical experimentation, small portions of the remedy have been allotted to quite a number of responsible physicians, with the understanding in every case that no part of the remedy be sold, that no charge be made for its use, which obviously would be purely experimental, and that full and absolutely correct reports be rendered to Dr. Ehrlich concerning its action and the results obtained—whether good, bad or indifferent. Fortunately, few of the medical men thus entrusted have been of a calibre to violate the conditions imposed. But of that few, the least said the better. Not only have they used their small supply for their own gain, but they have ignored the essential dosage, in order to extend its use to as many patients as possible. Ehrlich has pointed out the danger of too small doses and claims that these create a special tolerance that precludes any later therapeutic effect from even proper dosage. Thus direct injury

has been done to patients, who in most instances have been required to pay large and excessive fees for such improper and injurious treatment.

It is needless to point out that these methods have been in direct contravention to Dr. Ehrlich's restrictions. They outrage every sense of professional decency, and constitute a sad recompense for Dr. Ehrlich's confidence and kindness. The glad feature of the situation is that the physicians who have so violated a professional trust are exceedingly few. The actual culprits are pretty well known and sooner or later they will themselves reap the evil results of their acts. Already they have lost the respect of every one who is aware of their wanton breach of trust—and this to most professional men is a pretty severe punishment.

The quacks, as was expected, have been quick to take advantage of the hopes created by the widespread dissemination in lay publications of information concerning the remarkable efficacy of "606," and the fact that they did not have a particle of the remedy has not deterred them from offering to administer Ehrlich's "606," for as large fees as they could get. It hardly seems possible that any men of even the first instincts of decency could be guilty of such ghoul-like traffic on the sufferings of their fellow beings. And yet it is an assured fact that not a few individuals have had the manifestations of their fearful affliction removed by ordinary mercurial treatment—at fabulous rates—and falsely secure in their freedom from blemish have gone forth care-free and happy. The criminal character of such methods are all unknown to the unfortunate victim in whose blood still lurks the menace of a disease that sooner or later is certain to manifest itself in some of its

frightful forms. More than this, secure in the belief that he is cured, the deceived patient resumes his ordinary manner of living, and discontinues all of the precautionary measures he may have been practicing to avoid infecting others. Therefore, all unwittingly, he may directly convey a loathsome disease to many, or if he marries may impart a terrible curse to his innocent wife and offspring. The whole situation, produced by nothing but the cupidity of the meanest class on earth—medical charlatans—is a fearful arraignment of the lengths to which some men will go for the sake of a few dollars.

As we had occasion to say in our August issue, no blame can be attached to Dr. Ehrlich for the unfortunate evils that have sprung up coincident with the introduction of "606." To the best of his ability he has done everything possible to secure the broadest and most complete knowledge from disinterested sources concerning the action of this powerful arsenic salt. He has not been content to depend on his own observations or base any claims solely on his own results. To be perfectly fair, any of the enthusiasm concerning "606" that has seemed premature or extravagant cannot be laid at the door of Dr. Ehrlich. His attitude and methods throughout can well stand as an example to the profession of the scientific conservative position a true honorable physician should always take. "606" is a remedy that apparently offers new and gratifying possibilities in the treatment of a serious disease, but until its utility has been fully determined and sufficient time has elapsed to justify definite conclusions as to its permanent effects, cautious medical men will not "go off half-cocked," and make any statements that will later have to be modified or retracted. Such experiences always re-

flect on one's judgment if not one's intelligence.

Christian Science has been well called "the imposture of the ages." Realizing its menace, as medical men so long have, it is a matter for surprise, that a more militant attitude has not been taken toward its pernicious practices. A great many people have wondered—and naturally—why the medical profession has remained so indifferent to a cult that has been held by every competent medical authority to be so dangerous. If Christian Science is wrong in its teachings and methods, why have physicians failed to come out and actively fight it?

While it is freely admitted that Christian Science is one of the gravest evils of the day, the majority of medical men have hesitated to attack it for several reasons. First of all, most intelligent physicians have realized that all cults are aided by anything bearing the slightest semblance to persecution or martyrdom. There are a good many people who see in every move of the medical profession some ulterior selfish object. It has ever been thus since the days when medicine was in the hands of the sorcerers and necromancers, and every act was surrounded by mystery and suspected accordingly. A great many people, therefore, would promptly consider any movement against Christian Science as simply some new effort of the medical profession to advance its own interests, or to restrict personal liberty. One has only to observe the effects produced by the earnest attempt of thinking medical men to secure the establishment of a national department of health, to understand how the efforts of the profession are misinterpreted and misunderstood. The plan to organize the various health bureaus under one head was no sooner an-

nounced than the hue and cry went up all over the land that the "allopaths" were trying to prevent the citizens of the United States from employing physicians of any other school! Nothing could be more ridiculous, yet it shows how every act of the profession is made reprehensible by its enemies and traducers. To expose Christian Science of the gravest practices would only lead countless people to say that the profession was seeking to control the sick!

Another reason why medical men have refrained from actively combatting the evils of Christian Science, is found in the religious character of its claims and teaching. There is an inherent objection in the make-up of all Americans to interfere in any way with the religious beliefs of their fellows. The stress laid by the constitution on this matter indicates how deeply rooted religious freedom was in the very beginning. The linking together of religion and medicine was therefore a most clever move for this American enterprise for it insured an immunity that is invariably accorded American institutions and ideas. No physician wishes to be placed in the position of attacking the religion of any one, and yet that has repeatedly been one of the foremost charges whenever medical men have protested against the fallacies of Christian Science.

Professional pride has been another reason for the seeming reticence of physicians to fight the growing evils of Christian Science. Every doctor is conscious of the wonderful strides medicine has been making towards accuracy and exactness. The results possible today not only in the diagnosis but also in the alleviation and absolute cure of disease give modern medicine and surgery a commanding position they have

never held before. The triumphs of hygiene and sanitation are apparent on every hand. If medicine as now practiced, with its possibilities so potent, cannot compete with the fallacious, ill founded and illogical methods of Christian Science, the medical profession are striving in vain. Fortunately, medicine not only can hold its own, but among intelligent people will make the achievements of Christian Science appear ridiculous by comparison. Medical men have felt that this would be the outcome, that medicine by the sheer force of its splendid service for humanity would sooner or later relegate Christian Science to oblivion. A great many physicians, proud of their work, have therefore been content to let things take their course, trusting to time to remove the dangers of Christian Science.

But there is another side to the question. There can be no doubt as to the ultimate fate of Christian Science in so far as it assumes to cure disease. But during the time that will be required for education and the growth of intelligence to remove the menace of Christian Science, a great amount of harm is sure to be done to the uninformed. One has only to peruse the *Religio-Medical Masquerade* by Frederick W. Peabody, to realize the dangers to the gullible classes. Mr. Peabody is a Boston attorney who represented the Arena Company in 1899 in the suit brought against that magazine for the publication of Mrs. Woodbury's article, as well as in the counter-suit of Mrs. Woodbury against Mrs. Eddy. He was also retained by Rev. Minot J. Savage and later by *McClure's Magazine* to make a legal investigation of the history of Eddyism and, finally, was one of the attorneys in the suit brought by Mrs. Eddy's two sons for the division of her estate. As the Mas-

sachusetts attorney in these various cases, he examined under oath many of Mrs. Eddy's most intimate friends as well as the highest officials of the "Christian Science" organization. His knowledge is therefore not based on hearsay or popular belief, but is the result of careful and accurate legal investigation.

Mr. Peabody shows the great injury that Christian Science offers to the ignorant and impressionable people of the land and arraigns the leaders of the cult in scathing language. He knows whereof he speaks and his book gives a summing up of the impious teachings of what he tritely states is the greatest get-rich-quick concern ever conceived. To the medical profession this book will prove not only of absorbing interest, giving as it does so much new and authoritative material concerning Christian Science methods, but it can hardly fail to stimulate medical men to combat more actively Christian Science teachings and practice relative to infectious and contagious diseases. The profession may not thoroughly realize the constant danger offered by the attitude of Christian Science votaries towards the notifiable diseases. After reading Peabody's masterful book the danger will be plain, and this is only one of the services rendered by the author. He has done a noble work in exposing Eddyism, and it is difficult to see how the profession can longer maintain its indifferent attitude in the face of this latest and most authoritative exposition of the frightful Christian Science menace.

Alcohol for soldiers is recommended in the French Army, (*Bulletin Officiel*, No. 52, 1909). It is the official opinion that a daily amount of eight ounces of wine with meals or its equivalent of beer, is very beneficial by increasing the caloric value of the food, and that by its anesthetic effect it soothes the nervous system, diminishes fatigue and increases resistance—

not only in epidemics but at all other times. On the other hand the Germans in the African campaign against the Hereros, used one-tenth a litre of spirits or the equivalent of wine, and saw no appreciable diminution of the sickness, though it was thought to prevent gastro-intestinal disorders. It surely did not increase illness. It was found to induce sleep, prevented chilling at night, made the water more palatable and kept men from drinking viler stuffs, while it added 300 calories to the food. Some abstainers would give their share to comrades who thus took too much, but the other abstainers acquired a taste for alcohol, and it was thought to have made men irritable, lazy and insubordinate. Thus we have another addition to the growing mass of discordant opinions on the use of alcohol. If it is very bad for soldiers, the French and Germans must be fools to continue its use, but as it is still a part of the diet there must be good scientific reasons and all French and Germans are not fools. As these Europeans are not inebriates, the matter is a little outside of the sphere of our Society for the Study of Inebriety, but we hope that they will at least take notice of this curious phenomenon of the persistent of habits believed to be harmful.

Alcohol in the tropics is thus again advocated. The esteemed *Boston Medical and Surgical Journal* stated a decade ago that the use of alcohol in the tropics had been so conclusively shown to be harmful as to be "beyond the possibility of discussion." Yet the use of it in the tropics continues and the discussion still keeps up in spite of its impossibility. Boston should wake up to this matter. Alcohol may be a devil when unbridled, but when harnessed may behave like an angel. Let's discuss it all the time, for no human problem is ever beyond the possibility of discussion—except in Boston.

The dilatory payment of doctors' bills has always been a special piece of injustice as well as a source of annoyance to physicians, and many reasons have been advanced, both by the profession and the laity, in explanation of the practice. It has been reserved, however, to a correspondent in the *New York Times* of October 31st to advance the most novel, if not the most logical, *defense* of the practice. This correspondent considers that "something may be said in defense of the dilatory payments of doctors by their patients," because a physician recently tendered to him for the first time a bill for services rendered four years back, so that "no one in the family could recollect the occasions charged for." Unless the writer means to imply that physicians usually do not render accounts until too long after the service for its occasion to be recalled to mind, it is difficult to grasp the point of his argument. As regards the individual instance cited, it must be admitted that a physician who waits four years before presenting his bill naturally gives the impression that it is of little consequence when it is paid. But it is hard to find in that solitary instance any "defense for the dilatory payment of doctors by their patients" as an ordinary thing.

Many physicians, however, do undoubtedly allow too long a time to elapse before presenting their accounts. After all, there is an aspect of professional service of a business character, since the physician certainly earns his livelihood, by what is in effect the selling of his services. That being so, the purchaser has a right to know about his purchases of this kind whatever he would expect to know about the purchase of any other commodity. Tradesmen usually render prompt statements of pur-

chases—even when their customer is a physician—no matter what latitude they may be disposed to allow in regard to payment. Wholesale dealers render invoices of goods at the time of sending. There can be no reason why a "statement" should not be rendered in like manner by a physician immediately after the termination of a short attendance or at frequent intervals in the course of a long one. This course would be really in his own interest also, as well as in that of the patient, for the sense of obligation rapidly cools as the memory of the service rendered becomes gradually effaced.

There is something to be said, however, for the custom that has grown up through the centuries among the disciples of Aesculapius, of showing no precipitate haste in rendering an account. Speaking generally, the very condition that calls for the physician's aid, lessens, in proportion to its gravity, the patient's capability to afford payment. Illness, to the mass of people, means not only increased expense in other respects besides the doctor's bill above the ordinary during its continuance, but also a diminution of income whereby such expense may be met; and it is doubtless to the recognition of this fact and to a human desire to give the patient the opportunity to retrieve himself, that the custom of delaying the doctor's bill has arisen. One does not wish to exact one's dues at the very time that the debtor is least able to pay them without serious inconvenience.

The rendering of a "statement," it is true, does not necessarily imply a demand for instant settlement, but that fact might not be immediately evident to the public, while, on the other hand, a notification to that effect accompanying the "statement" would operate as a suggestion to defer pay-

ment, and so only tend to perpetuate the evil.

A legal obligation to the prompt issuance of statements of account which would possibly commend itself to the commercial world at large, would meet the difficulty. Most states have "statutes of limitation" which render void an account that has not been acknowledged for a certain term of years, either by a payment on account or in some other way that legally keeps it open. Would not the object of these laws be much better compassed by making the statute of limitation apply to the time in which an account must be rendered, rather than to the time at which payment may be exacted at law? Let it be ordained that an account shall be rendered within one month, or in such other short period as may seem suitable, after the services have been rendered or the goods supplied, the account becoming *ipso facto* void unless it is so presented. By this means the debtor would be protected against extortion or injustice, while the creditor would not find, as is not infrequently the case at present, that a dishonest debtor has succeeded in crawling out of his obligation through the gateway of the statute of limitation.

The antivaccinationists have suddenly become very active in St. Louis, being fomented by antivaccination editorials in the daily press. The local medical societies have replied with public manifestoes. There can be no doubt that times are changing in many respects and it is worthy of consideration whether the medical societies everywhere might not now add to their functions of professional advancement those of public enlightenment. Spasmodically this has been attempted in various directions and it is difficult to see why the plan should not be more generally adopted. The Council on Public Education of the American Medical Asso-

ciation would probably be prepared to furnish on request syllabuses of facts and data on various subjects, so that a substantial uniformity of teaching might be maintained. By this means a campaign of enlightenment might be inaugurated, which, instead of confining itself to a few mass meetings in the larger cities, should reach the smallest communities throughout the entire land. After all, it is the masses of the people in whom "the power behind the throne" really resides, and any measure that will tend through systematic teaching according to some organized and controlled method to enlighten the darkness in which they are shrouded in regard to many of the public questions in which the medical profession has a particular concern, would be of incalculable service. The efforts now making throughout the country in regard to antituberculosis teaching have fully justified such public teaching and have cleared the way for similar public instruction in all the questions of public well-being that come rightly within the purview of the medical profession.

Announcement—It is needless to inform our readers that AMERICAN MEDICINE has prospered during the last few years; it has been evident in many ways and the past year has been the best in its history. In keeping with the original aims of its founders AMERICAN MEDICINE has been conducted solely in the interests of the profession; thus its profits have been, and will continue to be, turned back into making the journal larger and better. This means more pages of reading, more illustrations, and an increase in every way of every thing that makes the publication useful to its readers. The plans for 1911 comprehend therefore an increase and advance in several important directions, all of which will tend to strengthen the position of AMERICAN MEDICINE as a journal by the profession, of the profession and for the profession.

MEN AND THINGS.

A Loss to American Pharmacy and Medicine.—In the death of Professor Hallberg, American pharmacy has suffered a serious loss. No man has done more during the past two decades to place pharmacy and pharmacology on their present plane than Carl Hallberg. Few men have higher ideals or hew closer to them than did this strong, earnest worker in the field of science. For many years he has taken active part in every movement tending to uplift pharmacy and therapeutics. At the meetings of the various national and local organizations he was always a leader, point-



heart as tender as a woman's, and to those who came close enough to him to touch his lovable nature, he was one of the finest, truest friends on earth. Whatever his shortcomings of manner and method, his principles rang true and he was a man in every sense of the word. Equipped with a brilliant mind and a splendid training, he was a teacher to admire and love; while as a leader in the pharmaceutical world his memory will long be cherished.

Professor Hallberg was born at Helsingborg, Sweden, October 13, 1856. Here he obtained the basis of his education. He attended the Latin school during 1860-61, entered the gymnasium in 1864 and graduated in 1869. He landed in America for the first time on July 4, 1869. He continued his education at the Philadelphia College of Pharmacy, where he graduated with honor in 1876; he studied at Harvey Medical College, receiving his degree *M. D. honoris causa* in 1893. He married Therese Bergstrom in the same year. Since then he has been professor of pharmacy in the Chicago College of Pharmacy, which is a part of the University of Illinois. He has been a fellow in the Chicago Academy of Medicine since 1891; organized the National Institute of Pharmacy, a system of home study in pharmaceutical sciences, and was one of the directors awarded gold medals by American Pharmaceutical Association at Detroit in 1888; received diploma with honorable mention at World's Columbian Exposition at Chicago in 1893; served on the Committee for the Revision of the National Formulary since 1886; editor of the *Western Druggist*, 1883-93; editor of the *Bulletin of the American Pharmaceutical Association* since 1906; and has been a member of several committees of the American Pharmaceutical Association for many years.

ing the way to greater accuracy and efficiency. Like so many men who have a sense of his obligations to his profession, he was positive in his views and forceful in their presentation. Consequently, he often made enemies but none of these were ever known to question his ability or honesty of purpose. At times in debate or discussion, he seemed intolerant of the opinions of others and this doubtless was an obstacle which stood in the way of many honors which would otherwise have come to him. He recognized that his manner was unduly combative at times, and no one regretted it more than himself, particularly if in the heat of argument he had hurt or wounded a friend's sensibilities. Under his rugged, sometimes rough personality, there was a

Professor Hallberg served on the committee for revision of the United States Pharmacopœia for three terms, and for many years was secretary of the Section on Pharmacology of the A. M. A.

In closing these few words concerning a man who faithfully played his part in his chosen field of activity, it can truthfully be said that here was one who never shirked his share of the hard things. Wherever he was placed, he was soon found with his shoulder to the wheel, pushing ahead, never pulling backwards. None of those who knew him were blind to his faults, but his qualities so far overshadowed them that now that he has gone only the good, noble, lovable portions of his life and personality remain in our memory, and there they will stay for many a day.

The vending of fruit, confectionery and the various forms of pastry, from street-stands, push-carts and peddler's baskets, is abominably unsanitary and should be abolished. In the better sections of the city, little of this practise may be encountered, but among the more crowded districts and poorer neighborhoods, the street peddler thrives. The small dealer starts out in the morning, with a basket or box of the most inferior grade of assorted confectionery, and takes his place along the curb where he awaits the passing purchaser who fingers over the wares, until a selection is made and then greedily devours the candy—while the vendor carefully rearranges his stock in trade, with his not too clean fingers. It is bad enough that the sweet-meat (?) is impure—but when we recall that the basket remains in the open all day, and in most cases without any covering, along the curb where the dust and pulverized refuse from the street and gutters is

blown upon the contents, we can easily appreciate how contaminated it must be.

The soft candy, and such as the chocolate-coated variety, exposed to the changes of the weather, readily absorb the impurities from the dust and air. Notice, upon a warm day, such a basket or box with its grimy proprietor at the corner, and see the street-sweeper a few feet distant diligently brushing the pavement, so that a cloud of dust and particles of decayed matter fill the air only to soon settle upon the softened or moist confectionery.

The idea of merely inhaling the dust, is revolting—yet it is eaten—only in a disguised and more palatable form. We fully realize, that in the manufacture of these products, only the most inferior grade of material is necessarily used and that before it reaches the selling receptacle, the candy passes through many hands and unhygienic processes which are decidedly unclean; but it becomes worse if we take the time to notice the pains one of these peddlers will take, to maintain the attractiveness of his display.

Toward the end of the day, the merchandise begins to lose its fresh appearance; the surface of the coated varieties becomes dulled from exposure and frequent handling; and then, it is common practise for the man in charge to select such pieces, and, holding them to his mouth, blow his breath upon them and then rub them to a polish—using his fingers or coat-sleeve, or even worse, his *pocket handkerchief*. Of course we might speculate as to the variety, number and virulence of the pathological organisms in that man's exhaled breath—upon his clothing, or within that handkerchief—but it is too disgusting. Nevertheless the fact remains, and is easily proven by a little observation.

The same process applies to fruit. Everyone has seen the dirty foreigner blow his breath upon an apple and then rub it to a polish upon his coat. But that seems customary—the apple “looks” cleaner and more “shiny,” and sad to relate, it is one of the failings of human nature to prefer to buy “shiny” articles.

Perhaps the worst result of this form of selling falls upon the children. The youngsters, with their ready pennies, are the best customers and sad to say, the chief sufferers. Their resistance to the impure produce is naturally much lower than that of the adult purchaser. They are obviously more susceptible to infection and contagion, which in many unrecognized instances are induced and spread in this manner.

Some stands and baskets have glass covers, which are commendable, but which still offer slight protection against the “handling and cleaning” process. Why is it necessary to sell these delicacies (?) upon the street at all, especially when the innocent children are the shoppers? It is bad enough to have the cheap and impure stuff even in stores, the poorer class of which vie with one another in producing “more for the money,” in order to catch and hold trade; and which necessarily results in the impure products of confection, ice-cream impurely flavored and made of inferior ingredients, and the almost deadly soda-water, which may be seen advertised in certain sections as selling at “one, two and three cents a glass.”

Could the pure food law possibly be made to cover these practises?

An interesting point in comparative racial psychology is exemplified from a medical point of view by a comparison of the editorial summary in the *Lancet*

(London) for October 8th, of the introductory addresses delivered at the opening of the principal English medical schools, with a similar report in the London correspondence of the *Medical Record* (New York) for October 29th. For example, in the address at the London School of Medicine for Women, Mr. E. W. Roughton, as viewed through the *Lancet's* spectacles, “asserted, in quite plain terms, that the differences between the sexes are deeper and more far-reaching than costume or political disability. He even went so far as to introduce into his discourse a quotation from Dr. Harry Campbell, setting forth that the powers of self-reliance, origination, and invention in woman have at best been only feebly developed. He then proceeded to discuss differences between the rate of physiological development in the sexes, as well as differences in its nature which are answerable for organic and permanent differences in temperament and character.” This may be described as the broad philosophic view, which assumes that the reader is already interested, either in the subject of the address itself, or in the personal attitude towards it taken by the particular speaker.

The writer in the *Medical Record*, on the other hand, assumes no such special interest on the part of his readers, but seizing on some graphic illustration uttered by the speaker, startles his readers into interest, leaving them to do their own reflecting thereon. He says, “Among the differences between the sexes he (Mr. Roughton) offered explanations of some, but said he could not find out why a woman prefers a sharp chisel to a screwdriver for turning a screw or opening a packing case, nor why a woman usually began to turn the screw backwards, nor her strange dislike for oil, or

her tendency to give a bang to the mechanism that does not easily work. Such peculiarities, the speaker said, he was inclined to look upon as having a sexual basis."

Sir Arthur Conan Doyle, better known, perhaps, as a novelist than as a sometime practising physician, in his address at St. Mary's Hospital Medical School, from the *Lancet's* viewpoint "brought all the charm of his literary style to bear upon his illustrations of the hundred ways in which variations of health control or modify the actions of mankind, often, indeed, of the individuals whose influence over their fellows is the most important; and he showed how completely medicine and the phenomena with which medicine chiefly deals are interwoven with all the currents of life, from those which go to the making of history to those which affect only the humblest individuals."

The *Medical Record*, with greater devotion to the concrete, says, "In all directions medical facts threw light on customs and historical incidents. For centuries people wore wigs because a skin disease on his head made Francis I of France cover it with artificial hair and his courtiers followed suit. The association of diseases with certain characters was a puzzling problem. Caesar and Mahomet were epileptics and many other great men might be thought to be under suspicion of some disease." But the following "point" was too arresting to be overlooked by the American reporter, while it entirely escapes notice at the hands of the English commentator. "There were, he admitted, some dangers (in medical studies being made a part of the general curriculum of people of means, as advocated by Sir Arthur) but in the great post-graduate course called Life he would learn to correct those weaknesses. One was un-

due materialism. He was educated in an age which looked upon mind and spirit as a secretion from the brain as bile was from the liver. Brain centres explained everything; if they could find and stimulate the centre for holiness they would produce a saint, but if their electrode slipped on to the centre of brutality they would evolve a Bill Sykes."

The editors of both journals know, it is fair to assume, what will best suit the mental requirements of their respective readers as a class. That being so, we must conclude that the English reader looks for a broad and comprehensive survey of the general trend of the speaker's views, while the American reader needs to have his attention arrested by some startling phrase or epigram, the illustration of which he rapidly generalizes and applies for himself.

The Physician as Historian.—We are not disposed to urge that the physician is the only man who understands human nature, but at least he is alone in scientific comprehension of the subject. He can predicate with tolerable certainty what course will be pursued under given circumstances by a tuberculous subject or by a victim of the gouty or rheumatic diathesis, or by the unwitting sufferer from myopia or astigmatism. Conversely he can reason back from the performances of a prominent figure in history what pathological conditions are likely to have been present in that figure's physical constitution. Knowledge of this kind was completely absent from historians of the past who were prone to classify kings and other leaders either as good or wicked and to see, in the inevitable terminations of the careers of these worthies, the finger of a pleased or outraged Deity. Particularly in the unpleasant

deaths so common in olden times from ignorance of what are to us the most obvious hygienic precautions did the historian take a melancholy pleasure in pointing out a supposed punishment of a sinful and rebellious general or monarch. The study of the habits and motives of any prominent historical character is full of interest to the physician, for to him alone they speak in clearest accents of inherited diathesis and an environment almost sure to kill off at an early age any sort of weakling. The fits of temper, the jealousies, the unending amours that have been fraught with such weighty consequences to nations are not to the physician evidences of deliberate wrongdoing, but only symptoms, often perfectly inevitable. We little know, we who speak of the selfishness of our rich, of the absolute ignoring of the wants and troubles of the poor by the great and powerful of past ages. It is the physician who has done most to awaken and educate a conscience in the wealthy, by showing them how their own welfare depends upon that of the less fortunate. Witness not only the gifts of magnificent hospitals, but of vast and beautiful parks for breathing spaces. It has been a wearing task in the face of egotism and ignorance, but we have done it because we know human nature. We look forward to the writing, some day, of a history of mankind by some scholarly student who has practised medicine among all classes of men and women. It will display a knowledge, a breadth of view, a power of analysis, and, above all, a charity that will make it great as well as unprecedented. Only such a man can have the proper indifference to the influences of partizan politics and sectarian religion that will enable him to weigh character in a dust-proof balance and to explain, on a firm

scientific basis, the divagations of a given temperament, just as he has finally explained the long misunderstood and desolating plagues of the middle ages.

In the death of Henri Dunant, which occurred at a Swiss health resort on October 30th, civilization has lost one of its greatest benefactors of recent times. To his initiative, energetic persistence, and personal generosity, that glorious international organization of mercy, the Red Cross, owes its existence. Dunant had been engaged in 1859 at the battle of Solferino, where the terrible and distressing sights of suffering that he witnessed among the wounded led him to conceive the idea of drawing the nations together into an agreement to regard as neutral all the sick and wounded in war, as well as all those professionally engaged in caring for them. From the international conference called at his instance by the Swiss Federal Council in 1863, sprang the Geneva Convention of 1864, at which the present articles that govern the relations of combatants to the sick and wounded and to medical officers, nurses, etc., were formulated and have now been formally agreed to by nearly every civilized nation in the world. The unanimity with which, in the main, the provisions of this agreement have been kept in all subsequent wars between civilized nations is one of the greatest imaginable testimonies to the increasing influence of humane ideas throughout the world. It indicates, more strongly perhaps than anything else, the growth of a "public opinion of mankind," not bounded by any narrow confines or limited to any one imperial sway, however widely extended. The splendid work done by the Japanese Medical Service in the Russo-Japanese War,

which has been so favorably commented on by both American and British medical critics, as well as by those of other nations, which sets forth the latest and highest standard of humanity in warfare that has been hitherto attained, is the fruit of the seed planted by Henri Dunant. The temptation to make use for warlike purposes of the exemption from hindrance accorded by the Geneva flag must have offered a sore temptation at times to its abuse by military commanders. There has been, it is true, a few isolated charges of such abuse in various wars, but very few as compared with the opportunities, and then the unauthorized acts of individuals or small bodies; and we believe we are right in saying that in no case have the charges thus made been clearly and indisputably substantiated. Throughout the civilized world today the red cross on the white ground (the reversed emblem of the Swiss Republic which brought the nations together for this beneficent end) remains a monument more enduring than brass to the realized ideals of Henri Dunant.

The question of child actors may be well taken up in connection with the remarks on the subject of child labor and education in our October issue. We there pointed out the dilemma in which our child labor laws and our school laws put the poorer families, who are thus driven to the alternative of breaking one or other of these laws or of depriving their children of proper feeding and care. We asserted that medical science could not support the laws against child labor itself, but only against unwholesome or excessive child labor. To those who know anything of the requirements of a stage training, the higher work of the theatre seems an education in itself. It enforces as well as, or even better than,

the schoolroom the virtues of punctuality, discipline, concentration, and the sense of the imperiousness of duty. It entails training in deportment and speech and impels to a study of literature, thus expanding the mind. In point of fact, child actors and actresses are usually far above the average intellectually.

In most theatrical companies where children are employed they are kept under more careful supervision than are children in general, and their studies are by no means neglected. Indeed, attention to them is of the utmost importance to the intelligent manager, fitting the children more fully for their work. We are not, of course, speaking of mere "supers," children picked up mostly from the gutter, though even these must surely profit somewhat from their stage connection. We refer to the children of sufficient histrionic ability and general intellectual capacity to fit them to play child rôles in serious and wholesome plays; and it must be remembered that most of the plays in which such child rôles form a prominent part are plays of that description.

Massachusetts, Illinois, and Indiana forbid entirely by law the use of child actors, regarding such employment as coming under the factory acts. We cannot but think that this attitude is wrong; and that such occupation is on the whole free from the objections that can properly be urged against the long hours and often unwholesome conditions of factory work, while it is exempt from the charge of interfering with the children's education, to which indeed it usually is, and can be further made by law, auxiliary.

An Apology—We regret exceedingly that a clerical error led us last month to credit Gen. Bingham's article on "The Girl Who Disappears" to the *Metropolitan Magazine*, whereas it appeared in *Hamp-ton's* for November.

ORIGINAL ARTICLES.

THE CYSTOSCOPE IN PRACTICE.¹

BY

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The cystoscope has been and is now to a greater or less extent considered an instrument to be used solely by the genito-urinary specialist. While it is true that to this specialist we owe the invention and subsequent development of the instrument, it is also true that it can be of great service to others if used with caution and intelligence.

In this paper I shall endeavor to describe only the technique of cystoscopy, where it must be used with caution, and where it should not be used at all.

I am writing on this subject not as a specialist of genito-urinary diseases, but as one who has seized a new and valuable surgical device and applied it to those cases in which additional means were necessary to establish a diagnosis. In hospital and private practice, I have found it of incalculable benefit.

The cystoscope was first employed by a German named Bozzine, at Frankfort on Main in 1807. He made use of a metal tube introduced into the urethra, with the direct light of a candle for illumination. Up to the time of the invention of the incandescent light, the cystoscope was so crude an instrument that little progress was made in its use. Since that time the progress has been rapid.

Nitze in 1888 made a great improvement in the cystoscope, and all the instruments now in use are modelled after his. Without going more fully into the history of the development of the cystoscope, I shall describe briefly few only of the many forms now in use in this country. There are two types: one using water inflation of the bladder, and the other air inflation. Of the former, there are two varieties, one of which employs direct vision, and the other indirect. By this is meant that the view obtained by the former is direct from the bladder wall to the eye; and that from the latter, from the bladder wall to a prism, and thence to the eye by means of a mirror.

The instrument as devised, is made of a sheath and a telescope, together with an obturator for facilitating introduction. The lamp is placed on the beak at an obtuse angle. With the telescope in place, the view in the direct instrument is made from the convex side of the angle; while in the indirect it is made from the concave. This instrument, a direct type, is the Tilden Brown; while this one, an indirect, is an Otis modification of Nitze. There are two channels which run down the side of the telescope to hold the ureteral catheters. At the proximal end are two stopcocks for the ingress and egress of fluid. The telescope has three lenses, an inner or collecting surface, making an inverted image; a middle lens, righting the image; and an outer lens magnifying the image. This instrument is a form of Kelly's cystoscope, employing the air inflation. It is really a speculum, made in different sizes, and illuminated after the manner of the Chetwood urethro-scope.

It is a matter of a good deal of importance to know how to clean the cystoscope.

¹Read before the Woman's Hospital Society, April 26th, 1910.

Boiling will injure the lens settings, as will alcohol. Scrubbing with soap and water, washing with running water, then immersion in a carbolic acid solution—first strong and then weak, is my method. I have used a strong solution of biniodide of mercury without injury to the instrument. This cleansing should be made before and after using.

The principal uses of the cystoscope are:

1. Examination of the bladder.
2. Catheterization of the ureters, in that way determining the kidney or the ureter affected, the diagnosis of the disease, or the presence or absence of obstruction.
3. Treatment of the bladder.
4. Treatment of the pelvis of the kidney.
5. Removal of objects from the bladder or ureter, such as stone, foreign bodies, etc.

The practice of cystoscopy is easy and simple, if one bears in mind the fundamental principles of surgical technique. Surgical cleanliness is absolutely necessary every time. Too often is the precaution neglected, even by those who consider themselves experts in the procedure. There is always more or less traumatism, especially in the male, and it is quite possible under septic or partially aseptic conditions, to produce infection.

There are some men who consider cystoscopy rather superfluous, and others who, while recognizing its value, believe that it demands a specialist to perform it, and hesitating, as they do, to risk the loss of a patient by sending him to a specialist, trust to the obvious symptoms, and sometimes miss the true diagnosis altogether, or reach it too late for curative measures. There are, of course, limitations to the

practice of cystoscopy. There are times when in the presence of self-evident disease, when it is superfluous, and there are times when its use is possibly contra-indicated.

In all acute inflammations of the genito-urinary tracts, cystoscopy is contra-indicated. This applies to acute inflammations, not only of the urethra, bladder, and kidney, but of the contiguous structures, such as the prostate, seminal vesicles, and rectum,—for, in the presence of an acute inflammation of those structures, the bladder itself is in a state of congestion, at which time it is very susceptible to infection; while in the absence of congestion, it resists, to a very remarkable degree, all contamination. As is well known, any traumatism in the presence of an acute inflammation should be avoided as far as possible.

In tuberculosis of the bladder, the cystoscope is often useful and necessary, but it must be used with great caution, as, in the presence of this disease, the parts are very liable to secondary infection. A tubercular condition of the bladder, usually secondary to renal disease, may present very few signs in the urine; sometimes entire absence of the tubercle bacillus. In the presence of tuberculosis of contiguous structures, the cystoscope should not be used.

There are, however, many conditions of the bladder, ureters, and kidneys, in which the cystoscope is of great aid, or positively demanded. In chronic cystitis it is of great assistance, not only in showing the extent of the disease, but for its treatment.

In suspected new growths, stone, foreign bodies, and prostatic hypertrophy, the cystoscope is of undoubted value in making a diagnosis. It is, however, in the

cases of haematuria, of unknown cause or without symptoms, ureteral calculus or obstruction, or renal stone or lesion, that the cystoscope, together with ureteral catheterization becomes essential. In the treatment of pyelitis by injection of silver nitrate solution, as practiced by Winfield Ayres, the cystoscope is necessary.

As said before, cleanliness in cystoscopy is absolutely essential. The patient should be prepared as for a minor surgical operation, and the instruments and operator's hands sterilized. Before this is done, however, a thorough physical examination of the patient should be made, to determine any complicating lesions, such as pulmonary tuberculosis, cardiac or pelvic disease. This is very important in every case, as the detection of pulmonary tuberculosis might obviate the necessity of cystoscopy for cystic or renal tuberculosis, or the presence of a heart lesion necessitate extreme caution in the use of the cocaine products.

The bladder should be distended with at least four, or better still, six to eight ounces of a clear fluid. The urethra and bladder should be anaesthetized by the injection of one or two ounces of cocaine (two or four per cent.) or its substitute. My practice is first, to wash out the bladder with a two per cent. boric acid solution; then to inject two ounces of a two per cent. solution of eucaïne, which remains four or five minutes, some of the solution having been placed on the posterior urethra by withdrawing the catheter until the end lies on the posterior urethra. I then draw off the solution and fill the bladder with about six ounces of a two per cent. boric acid solution. If there is a good deal of pus or blood, more than one washing may be necessary. Sometimes, in

persistent clouding, a continuous flow allows of inspection.

The cystoscope is introduced like a sound, with absolutely no force. If there are strictures, they must be dilated beforehand. In the male, the meatus may sometimes have to be slit. I prefer the ordinary lithotomy position for the patient, with the hips slightly raised, but some men prefer the patient in a semi-sitting position, or a semi-Trendelenberg.

Glycerine is an excellent lubricant, but I am in the habit of using a special preparation. Before introducing the instrument, it is very essential to test the lamp, for sometimes you might find, after everything was ready for examination, that the lamp was burned out.

The real difficulty in the procedure of cystoscopy is in reading the picture seen. It is necessary to know the normal bladder, its color and anatomy, the variations from the normal, and to be familiar with the reading of urinary sediments. I will give just a few words on the anatomy of the bladder, as bearing on an understanding of the cystoscopic picture.

The bladder wall, except a portion around the outlet, is of a yellowish color, shading into a light red, with the red branches of the blood vessels making a net work over it. Any variation from this means abnormality. Near the outlet is a triangular area which is of a dark red color. This is called the trigone. It is marked off from the rest of the bladder by a ridge or bar of the same color, called the inter-ureteral bar. This bar is made up of increased muscle bundles in the bladder wall. This is the landmark by which the ureteral openings are found. If the cystoscope is carried along this bar from side to side its lateral limits are recognized by the

sudden change of color from red to light yellow. The red color makes a diagonal line from the lateral end of the bar to the bladder outlet. Just internal to and above the outer end of this bar are the ureteral orifices. When the bladder is fully distended, these orifices appear as small slits on the top of a cone like eminence, and, if watched a second or two, may be seen to emit spurts of urine, or pus or blood, as the case may be. I have found that this emitting of urine is a better guide to catheterization than hunting by anatomy.

It is well to know also that the inner layer of muscle fibres of the bladder run longitudinally, the different bundles being joined together by connecting bundles at different angles, so that they have a trabeculated appearance if the mucous membrane is removed. In the presence of infiltration the muscle bundles stand out, showing through the mucous membrane, as in chronic cystitis. In the presence of continued pressure, the spaces between the muscle bundles become deepened, forming what are known as diverticula. It is well to know also that the mucous membrane moves freely over the underlying muscle area, giving a folded appearance when the bladder is empty or only slightly distended.

There are certain conditions which may be encountered, rendering cystoscopy difficult, or even impossible. Tumors near the outlet, hypertrophied prostate, torsion of the urethra, make this procedure difficult. Large and constant flow of pus or blood, or the presence of mucus, sometimes obscure the field of vision, in spite of frequent washings or constant irrigation. Trabeculation or diverticula may make it difficult to find the ureteral orifice. The bladder wall at the trigone may be so

perpendicular as to make it impossible to introduce the instrument.

Unless the bladder is fully distended, the folds of mucous membrane may be mistaken for tumors, and the landmarks or the ureteral orifices obscured. In the partially distended bladder, the ureteral orifices look like a pair of thick lipped openings, which can be easily overlooked in hunting for them.

In order to illustrate the value of cystoscopy in my own practice, I shall relate two cases of totally different lesions, in which the cystoscope was the determining factor in the diagnosis.

Case I.—A woman, forty years old, came to me two years ago, evidently suffering from a profound sepsis, much emaciated, with a small rapid pulse, and a remittent fever. She had been treated for eight months or more for what she called a mucous colitis, with a probably malignant disease of the splenic portion of the colon. My examinations failed to convince me of the presence of a malignant tumor, although there was a mass just under the border of the ribs on the left side, extending below about two inches, and reaching half way to the median line of the abdomen. The urine was about normal in amount, very slight trace of albumin, with a few leucocytes and an occasional hyaline cast in the sediment. I was curious about that left sided tumor, and decided to cystoscope. Catheterization of the right ureter showed urine with the above analysis. Catheterization of the left ureter showed no urine at all. The ureter was obstructed. A diagnosis of pyo-nephrosis, with a peri-nephritis was made tentatively; which, on operation, was shown to be the case. Nephrectomy was done, and the patient after a hard struggle, recovered, and is to-day perfectly well.

Case II.—A young woman, twenty-two years old, who had had a severe and prolonged labor, ending with forceps delivery, which had produced a vesico-vaginal fistula. This had been repaired about six weeks before I saw her. About one month before I saw her, she complained that she

seemed to be wet all the time, and that when she sneezed or coughed, considerable amount of urine escaped. Her doctor examined her but could find no vaginal opening into the bladder. He attributed this leaking to a loss of control of the outlet. At my office I was unable to detect any fistula by means of a speculum, probe and sound. Cystoscopy, however, revealed a slit in the bladder mucous membrane, and a tiny hole into the vagina. This was repaired with perfect result.

41 E. 41st St., N. Y.

A LIFE OF INTENSE SUFFERING AND OF UNREALIZED AIMS DUE TO EYESTRAIN.

BY

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Fifty or sixty years ago most of us had not reached manhood's years, so that it may be well for us to observe the way intelligent patients of those times looked upon and personally felt ill-health. Moreover, such patients, just as now, reflected the accepted official, medical, or "scientific" opinions of their physicians,—rather, of those of the generation just preceding. Instructive, therefore, both to present-day physicians and patients, must be the details of the sixty-year long sufferings and trials of one such old-time, much-enduring sick man. Those clinical histories may unexpectedly reveal exactly the same diseases, treated then, or mistreated, in exactly the same way as now. If so, as regards these diseases, the profession has not gained a peg in the last 100 years. Indeed, when one notes that these very diseases have multiplied one hundred times during this period, it is equivalent to a hundredfold greater failure.

The mere list of names applied by this patient, E. C. S., to his ailments would

be appalling were it not that, at present, conscientious physicians are better informed as to the nature of the underlying unity of the cause of most of this man's symptoms. Certain names recur with astonishing frequency throughout sixty or more years; such as "colds," "overwork," "nervous exhaustion," "neuralgia," "ill-health," "health bad," "fever," "worn out," "sore lungs," "run down," "broken-down," "cough," "lungs," "prostrated," "neurasthenia," "nervous prostration," etc.; but the one word, "sick" was written or spoken by him almost every day. Besides these one frequently meets in diaries and letters the following designations:

Scrofulosis; tuberculosis; ulcerated throat; diarrhœa; headache; intermittent neuralgia; congestive chills; chills and fever; pleurisy; cold on lungs; sore throat; diphtheria; "pleurisy of left lung"; nervous complaint; influenza; breaking down; ulcer in lungs; hurt lungs; nervous; health failing; almost cholera; the blues; lost heart; rheumatism; remittent fever; eyes sore; sick with boils; sick all over; little sleep and worn to a shadow; aging before my time; malarious fever; reduced to a skeleton; old; wasting illness; used up; insomnia; nervous disease; bilious attack; gout; cold on kidneys; indigestion; malarial fever; pain in side; wasting illness; muscular rheumatism; heart skipping its beats; lumbago; beating in the ears; brain so sore; death approaching; thin and feeble; lameness; half-paralyzed brain; sleeplessness; weak and light-headed; one side numb and almost palsied; head wild; afraid of falling; neuralgic palsy; trouble in head; head bursting; cerebral difficulty; something wrong for life with brain and spine; angina pectoris; pain at base of brain; head rings; cerebrospinal irritation; back of head all wrong; head ringing and spine burning; left side from eye to foot is wrong; slight shock of paralysis; nervous system shattered; hands and feet numb; cholera morbus; head worse; constipation; fever; fit of horrors; wretched; undone; helpless; unstrung; no head; no nerves; trembling and dizzy; one side of head comes to a deadlock every fifteen minutes; pressure on my head and twitching of the face; left side and eye semi-palsied; face and hands drawing; brain-pressure; in hiding; cerebral craze; power of action gone; growing aged; eyes grow old for first time—first pair of glasses (at 54 years of age!); eyes given out; nasal hemorrhage; grippe; rheumatic gout and head trouble; my head, my head!; food, rest, sleep, all seem to fail; relapses of

neurasthenic troubles; went to pieces with partial heart-failure; cardiac neurasthenia; sleepless; heart pounding; heart dilated; arterial system ossified; heart-failure.

The chronologic order is more illuminating: The *Family Blues*, or fits of melancholy, says the patient, were characteristic of his branch of the family. They were called, "the gray family," because "often gray in youth," but "they live as long as other people."

As a boy at school he had sore eyes, and eye-salve was constantly required. He was "inattentive and languid," "depressed and melancholic," "frail and highly sensitive." During most of his life he had "blepharitis."

At the Normal School he was "not healthy"; he was "misanthropic and discontented." "Devoured everything printed." Planned for immediate death.

In college, study was at the expense of his health. Between the writing of each letter he was compelled to lie down, exhausted. "Cough and pain in my side from application to my poem." Held the penholder as if writing a back hand. Unable to study without suffering, he became "wild," and was dropped from the rolls for a "lark" which universities would now hold unworthy of notice.

1853. He was long under the care of a physician; his health became worse, and "travel" was ordered. [When physicians do not know what is the trouble, or what to do the invariable command is, *Travel*.] Even his newspaper editorials are turned to "solemn thoughts of death and immortality."

1854. As editor: "Want of health," "not well any of the time"; "lost 9 pounds; weak in lungs and side."

1856. "Broke down in health"; "pleurisy; several weeks in bed"; "I look old, thin, lean and skeletal."

1857. Every plan, removal, way of life and thought, was dictated by the search for health. "Consumption" was the dread enemy always in mind, with attempts to keep it at bay by diet, hygiene, etc. "Cough not yet left me." "Writing or lying down, worn out with necessary exhaustion or prostrated with my symptomatic or sympathetic tubercular diarrhoea."

To winds and climate are now ascribed the pathogenic roles, and one may say that their supposed maleficent influences were the cause, throughout life, of frequent removals of residence, changes in habits, etc. Letters exist which go into these matters in detail. In 1857, e. g., the ambitious, lavishly endowed, but poor young man writes as follows:

The first few cold, raw days showed me very plainly that it would be futile for me to attempt to do any business in N. Y., this winter and live in Elizabethtown. The air on the Bay caused such severe congestion that I was literally used up before I arrived at the office mornings. This salt quality of air distresses me exceedingly. Then the country night air is much worse than that of the city for one's lungs—giving me additional colds every night I slept with the windows open, and sleeping with windows open is a necessity in my bronchial and catarrhal combinations of disease. So I rather reluctantly concluded to move over to the city—having a delightful cottage, furnished in good taste, and fearing the \$1000 additional yearly expenditure of city life. But my cottage was especially receptive of the cold gusts of winter. You remember I was driven over to N. Y., last January—and then, I thought that the additional time I should be able to devote to business after the change, would increase my income more than the difference of cost.

Later he writes:—

All my affections and tastes tend towards N. Y. life—there is no culture, no refinement in the American West—but, alas! it is the eastern climate which is killing me. The winds from any direction in St. Louis, or other inland Western cities do not distress me, and I should have gone after the "Star of Empire" long ago—in time to prevent this sickness, and in spite of associations—had it not been for the hope of your return. And now it is all in vain.

It is near Easter Sunday now; and this letter will not reach you till long after that date, but I wrote you a line the day I went West—

so that you will understand my silence. I have been through Pennsylvania and Ohio to Cincinnati. Stayed there on some business ten days and was very much prostrated . . . caused by the filthy river water. Have been getting better since, but am thinner than before, if possible—and came home a week too soon, as the March winds are still raw and irritating to the lungs. I am, perforce, careful in diet; take all possible exercise; bathe in cold water and adopt every hygienic rule that good sense would suggest—but after all fear I do not gain much, and am a perfect “child of the weather.” With a steady mild west wind—dry, and either cold or warm—I am buoyant, happy, *well*. With an east wind, or a severe cold or damp gale from any direction, I am prostrated, with distressing cough . . . Am growing thinner—weighing scarcely 100 lbs. But I am not growing worse, but rather gaining, and expect to get fatter in the spring . . . I am *stronger, much*, than I was six months ago.

Now I am going to be plain and honest with you—as you are a sensible woman, and if you know all the truth, you will not be imagining anything *worse*. I am too conversant, from experience in——, where we had a consumptive hospital for five years, with the different phases of this infernal disease (is it not infernal) not to understand two things.

First, that the reason 28 persons out of every one hundred die in New York of it is that people are either ignorant of the *early* symptoms or think it foolish to suspect them, and this too in a climate where the slightest cough should be a warning!

Second, that I have these early symptoms and believe that with careful, determined battle I can at least keep the Monster at bay for years, and perhaps kill him altogether. I have not my father's constitution, but *yours*. Am nervous, wiry and capable of great *endurance*—even when the weakest; can stand a continual irritation that would hurry a large, full-blooded man to his grave. If you had not possessed a nervous system of great strength (however easily excitable) you would have died long ago under the protracted bodily and mental suffering which have so long been teaching you the knowledge of the “Heavenly Powers.” Just so am I organized; am brave and determined to *live* if I can—as I have everything to live for. And I am sensible enough to know what shortness of breath, emaciation and expectoration mean, and to take all possible means to put an end to such things. Now there never was a case of phthisis cured by medicine—it may alleviate but can hardly retard, even. Pure air, diet, cold water and *outdoor exercise*, with mental rest, alone can do it. If I could have these three for two years I could build up a constitution. But at any rate I am in no immediate danger and if you were at home, and my life insured in favor—for \$5000 I should be perfectly happy. Yes! and I will tell you why. But my first item is to tell you why I have

not sooner written. My health has been such that I have not found until to-day (Sunday) *an hour* in which I have not either been necessarily *at work*—writing, *not* for amusement—or lying down, worn out with *necessary* exertion—or prostrated with my *symptomatic* and *sympathetic* tubercular diarrhoea—or rushing through woods and riding on horseback to get air and strength and repose enough to keep me alive a little longer. So that when I say “unable to write” I mean just what I say.

Prior to the receipt of your last letters—i. e. so long as there was a chance of your being *able to return*, I determined that I would not tell you the result of late medical examinations; I knew you had enough reasons for desiring a return, without my sending you another and a painful one. But now that I learn that it is hopelessly and forever impossible for us ever to meet again, I tell you my exact position—merely as a fact and not as furnishing a motive for your future action. I was in error in supposing that my lungs were not diseased; was right in saying to you that I inherited your *constitution*, but I find I inherited my father's *blood*; and years of precocious study, injudicious confinement, timid physical education (on the part of my superiors) had developed the *dormant tubercles* as early as last Fall, I now find. Dr.——, a most eminent man, *who has long known me*, made his examination a few weeks ago. He would tell *me* little, except to confirm my belief, that I could live much longer by my determined, invigorating course than by any other. I sent —— to him, whom he loves like his daughter, and he told *her* all. He said in brief, that we were too sensible and self-reliant to be deceived, and *he* told patients their condition; that my *left lung* is considerably diseased—*how much* he could not tell without another examination; I might stand it *one year*—perhaps five—perhaps more; much depended on myself, the weather, my circumstances etc.; a person can lose his right lung and get along; losing the left is equal to losing both; as it at once affects the heart; my mucous membrane is affected at the lower extremity . . . In short, I am in a consumption, as ultimately are nine out of every ten born from a consumptive parent;—he says I was *right*, when alarmed by pains in the chest, etc., before I had done growing, while my constitution was *forming*, in begging Uncle to let me go to sea and have a chance to develop; and he condemns the cruel timidity of my guardian and parent—the mistaken cautionary kindness, which caused them to refuse me what I then justly considered my only chance for life—boy as I was! He says that the contrasted cases of my brother and myself will ultimately show who was right. But all the past is past—I don't care or regret anything!

Well, I had anticipated all this, only I did not think the disease had yet reached the lungs—he says it commenced there—*scroful-*

ously, tuberculously; agrees with me that my own efforts will prolong things *greatly*; and was greatly pleased to see how coolly the whole matter was digested and met by me. So there you have the whole of it.

I at once changed the whole tenor of my life, and made the following definite arrangement—based on the newly discovered *preciousness of time*. I always had a voice within me saying—"What thou doest, do quickly!" yet never so plainly of course as now. How can one have what I believe Mrs. Browning calls "Wordsworth's great calm" unless one has his *great constitution*? He could afford to wait! One thing is certain; I am not, nor have I been for years, troubled with the *sickly-sentimentalism* peculiar to consumptive youths. But the following is my only course:—First I am necessitated to work every day for a living—though by my former hard work I have brought my business up so that I have a *subsisting* income; with only a few hours daily labor—my clerks, etc., doing the rest. I cannot stop to live on what little property I have and travel, etc., as I could get no permanent *cure*—it would only prolong things, and that not much, and I would die to-day sooner than spend a cent of the little sum which *my darling* will have against the cold mercies of the world. So, first of all, I must work at business so many hours a day. Next, I must take active, *unthoughtful* exercises *every day*—enough to oxygenize my blood, keep up my muscles and general strength. Have you ever read E. A. Poe's famous journey (of Hans Pfaal) to the Moon in a balloon? His car was surrounded by India-Rubber, air-tight and he had to work every hour to get air enough to breathe in, as the air grew thinner. When he did not work he would catch some sleep. But as he got farther out into the ether, he had to work *all the time* (gradually more and more) at the old condenser, and finally nearly died at the handle! Just so I find it in consumption; the less lungs you have, the quicker you must breathe, to get air enough; to breathe quick, you must exercise; the time spent in exercise must be increased, *as the disease progresses*, or your strength goes down fearfully, rapidly, *at once*! I could die in two months; I hope to live some years, and would expect to be able so to do, if I did not dread the winters. I dread next Winter! How I suffered last Winter, I can never tell you! Exercise also keeps up the nutritive energies and the muscular system. In short it is the *only* thing that both keeps up my strength and enables me to breathe freely. If there were no weather changes, and I could exercise all the time, not on my feet (for that tires me) but on horseback, I should not despair of living *for years*, with my morning and evening *spongings*, my cod-liver oil, etc. So I *must* devote a good share of each day to hygiene—for it is essential to *all* my plans and my dear ones' comfort, that I should live *as long as possible*.

But, if I live long enough, I shall yet write a few short poems—also a long Anglo-Ameri-

can half-pastoral on——, a drama——— and then—but I shan't have time! However; henceforth I indulge myself in no pleasant communings—no sauntering papers for Reviews and Magazines—*no long delightful letters*—I have little time to waste. Even what I wish to accomplish is not so much for reputation's sake—that I have calmly been brought to value little—to resign contentedly—and yet it *was* my ruling motive. But from a sense of the "*fitness of things*," from an aesthetic, morbid hatred of *incompleteness*, I hate to go into the other spheres without my scars and banners. It is not *decent* to die and not have done a thing you could have best done and desired most to do. And then, I yet have a faint hope, that a copyright of something I could publish, if I live long enough, may be of use to my darling, sometime.

This is my course—to live as long as I can—earn my living—and see if I cannot yet accomplish a *little*.

But I work against the tide. My heart is so affected that writing this letter makes it palpitate violently, and for this and kindred reasons, you must bear with short and simple notes hereafter Now in relation to my visiting Europe for health's sake, at my own or other's expense, I have a word to say. In the first place, the voyage would do me no good. Consumption is understood better than it was; hard exercise, other than walking, is a specific necessity with me—I long for it, as a drunkard for brandy. On ship-board you are on deck, at most, one-third of the time. All you can do is to walk, and then you are in the way. The cabin air is bad; the ocean air a sudden change. But if the air was pure above and below, it would only do me a *negative* good, that is, no *hurt*. Bad air at once distresses me, but good air does me no *good*, if I sit still and quietly inhale it. Here I can ride horseback every day, and in the summer I am as well off here as anywhere. In the Winter I had better go South and West, to be sure—inland and warm—anywhere *away* from the ocean. The marshes you speak of don't affect me, as I am not near them, and go into N. Y. in the *boat* daily in the Summer, and secondly, that *malaria* which generates "fever and ague" rarely injures the lungs. So that the voyage to Europe is not *essential* to my *health*, and therefore not "before all other things." Then again, I would not stir one step without —— I need her presence and love, and we cannot go together, of course, with —— and nurse, etc. Again, "what can I save?" is my constant thought. I have no money to throw away.

. . . . I am something of a doctor, you know. Your cough is probably sympathetic, and *bronchial*,—is undoubtedly nervous, which is in itself a troublesome disease, but your blood, I think, is not addicted to a *tuberculous* deposit, or you would *certainly* have had the consumption at ——; you, in such a case, could *never* have stood four years of such a bronchial trouble as you *then* had. Don't let any friend of yours take any of Dr. ——'s

opium and *squills* cough mixture, but if your sister must have a mixture, or a sedative, let her take *Tinct. Cannabis Indica* three times a day—5 drops—increasing one drop daily, until she begins to feel as if she had been taking the famous *Hasheesh*, made from the same "Indian Hemp." As soon as she feels *queer*, which will be at perhaps 15 drops three times a day, she must stop a few days, and then commence again. Its effects are miraculous; it has all the *sedative* power of *opium*, and no effect on the bowels or nerves, if *properly used*, and no *reaction*. An overdose is bad. Its effect is not instant, but in an *hour* your breathing is free, your judgment clear, your appetite good—it being a *tonic*, as well as a sedative, and a late discovery here. Write me constantly about *your* health. I am anxious—more so than I can now express myself.

1857. "Writing a letter makes my heart palpitate violently." He had hoped to accomplish "a little" before death. "Writing this letter makes me sick."

1859. "If my lungs last a little longer." "Health! Health!" "Vacation absolutely necessary for my life; entirely broken down; bleeding at lungs. Sickness consuming so much of my time. Ordered to Europe for health; couldn't accept. Write too much for health."

1860. "Written out and exhausted; brain consumptive, body sleepy and worn out."

1861. "Health continues excellent" [out-of-door life]. "Change good for health" [on horseback]. "Added five years by this summer's out-door life."

1862. "Letter-writing is the straw that breaks my back." "In the open air though I lived on hard bread and coffee and slept in the mud and rain, I got fat and felt gloriously." "Days spent at office-work, sickness follows sickness: Just crawled from my rooms to the office and back again." "Sick in bed for seven days." That there was no real organic disease of the lungs or heart, etc., at this time is shown by the fact that a life insurance company issued a policy to him. He believed that

a day or two of muscular gymnastics would enable the company to pass him. Again with the army there was "health and buoyancy, no matter how hard the work or great the exposure." "Have added five years to my physical endurance by this summer's out-of-door life." From this time on every possibility of getting away from office or literary drudgery was seized, as an instant relief from continuing or recurring ill-health.

1863. "Often troubled in my head nowadays;" "very weak and thin." "Great pain about heart-region; low pulse; aching in left arm and leg; sudden weakness." "Rheumatic pleurisy." "It is dull work, making money, with an aching brain, at \$5.00 the column. Now, every year, my head fails an hour earlier than the last." All engagements, plans, contracts were, consciously or unconsciously dictated by the symptoms sure to arise with writing or reading. If he travelled by rail, and read he was "sick the next day,"—ascribing it, perhaps to "the wretched water." If he rode or walked forty miles, "health improving as it always does when campaigning." Whenever much writing is done there is "sickness, constant suffering, lungs sore, etc." In vacation "strength comes back." Each sea-voyage "set him up for years afterwards"—great joy of health on returning—and yet he falls ill at once on resuming literary work. On the 17th there is a rainy day and letter-writing; on the 18th "sick with nervous complaint." "Saved my life by the vacation." "If ill-weather confines me for two days at a time I suffer enough to remind me that I am terribly mortal."

1864. "Have added five years to my physical endurance by this summer's out-of-door life."

1865. "Severe suffering in eyes and head from this work." Monday I suffered so much in New York, I thought a week would end me; to-day on the mountain height I am as strong as any other man." Two days on the water, he was so well, that he said "a month of it would cure him." Following great suffering at his desk, he is, on vacation, at once full of physical joy, "health steadily improved, is well, life has a zest, etc." Soon after arrival in New York, is "sick," "worse," "sicker." "Sold out my business to save my life." "Pleurisy and cough." "Doctor says I can never recover the health lost in the last two New York winters." "I suffer so." "If I *do* go it will be because my lungs have given out." "Withered lungs." "The doctors say that if I hadn't discovered and understood my condition years ago, and fought against it I should have died before Charley, so much for Will."

1866. The burden of ill-health from literary work was heavy, although he recognized that "editorial, or 'hack-work' would prevent real poetry-writing." "Have to stop all writing again." "Going to die;" "going into consumption."

1867. "At cost of eyesight and health did editorial work;" "health ran down with this steady labor, and chest is so sore,"—"but three days of fishing ought to strengthen the muscular tissues." "Health bettered at once in open air, and I am brown and hearty." "At cost of eyesight and strength have done a little on Theocritus."

1868. "Eyes so sore I can hardly write."

1871. Again "selling out so that at last I may write."

1872. He "goes away sick and utterly worn down," but in a few days (fishing)

he complains of the report that he was ill,—"never so strong in my life. Health better than ever."

1873. "Writing aggravates my wasting illness."

"I pick up a little strength and if I overwork in writing a single day come down again."

"As for letters I can't write them."

"For years I haven't been able to sit at a desk and write *three hours per diem* without breaking down in a fortnight."

1874. "The rough draft has nearly crazed me."

"Pulls me down to write."

"Writing two hours a day gets on my mind, spoils my sleep, *invariably* makes my lungs sore."

"Days when I don't read or write a line all bodily trouble begins to leave me; one week on deck with no pen or paper by me and I shall be well as you."

Working at essay-writing, on vacation, he is "unwell, lungs sore, etc."

"Proofs making me sick again."

"Writing has so depressed me, that, under medical advice, I stop it entirely."

"Worn to a skeleton with nervous disease and can't write."

1875. "I can't stand daily writing."

"As for writing, at present, that is impossible. You kindly ask after my health: in many ways it is better, decidedly. I have gained flesh, and look brown and well, and am strong muscularly. But as soon as I sit down for a morning's writing the back of my head is all *wrong*, and I have to stop soon or my whole system is affected. Am better for going down town, moving about, etc."

"The doctors say I may finish my book, and then write no more for a year, or be helpless for life."

"On ship slept well first time in three months."

Each voyage "set him up for years afterward," though ill at once on returning.

1876. "Under quinine treatment I sleep better;" leg in pain and my side half paralyzed; head seems to swell."

"Shall never be right on my wrong side."

"Hard week, bookkeeper absent; head and side affected; a partial paralysis always accompanies this nervous exhaustion."

"Reading consumes rapidly the vitality and affects the tissues of the brain."

He is "disqualified by sickness and poverty from anything but stock-jobbing, from writing even a lyric."

1877. "All I have written, during the past year, has been done at night, while my wife was asleep,—and at the expense of health and hopefulness. It requires some determination to keep one's work, done in this wise, from being morbid or smelling of the lamp,—but I try not to let my personal weaknesses get into my prose and verse." "Am a little stronger, but with considerable congestion of the brain still."

"My stock exchange life must go on—the rest may be silence—the doctor says it must be."

"Have read 12 essays—6,000 words each. Nearly killed me."

1878. "There never was a more unfortunate time for me to be ill. Have had to succumb, and, if I had done so a week ago, might be feeling better now. My cold, or lung fever, or whatever it was, refused to go off as usual, and got into the shoulder blades and side. Yesterday my breath was so short and pulse so high that I submitted again to be wrapped up in flannel and mustard-water, and took a pill.

To-day am easier again, but don't yet get the *kink* out of my lungs nor the soreness out of my chest. I think the doctor made me worse, so I haven't called him this time. But have sent, instead, to Dr. _____ (my own Newark physician) for the *tar-tonic* which brought me up after a similar attack some years ago. The old troubles in my chest and side seem to come out stronger than ever, if I have a cold, just as I flatter myself that I have outgrown them."

"Sharp bilious attack sent me straight to bed;" "indigestion;" "prematurely gray, almost broken down;" "ill and tired;" "losing strength and flesh;" "mad, bad."

"One side of my head comes to a dead lock every 15 minutes, and stays there until I have walked awhile in the open air."

"You must stop penwork, prose or poetry, or he will never live to Bryant's age. Forbid his doing anything out of business hours."

1879. "Health utterly broken down; face and hands drawing like paralysis; loaded down with work." "Sick and old; cheeks fallen in; defrauded of my natural term of strength and productiveness. No one knows my inner life." "Almost dead with brain-pressure." "My palsy creeping on again—left side. It all comes from my head."

While in the country in England, he gained 5 lbs., and for the first time in years he had some nights of sound sleep.

1880. "As an important chapter *must* be ready by March 1st—am writing from 10 p. m. to 1 a. m. nightly and my eyes have almost given out." He adds that "my last book has left me with a permanent trouble in the head, neck and spine and aged me rapidly," and he advises: "Don't have a *debauch* of reading, now. It

always makes you ill in a few days. *Read only so much* a day."

"Laid up with a sudden attack of the rheumatism, and am dictating letters that my time may not be wholly wasted." "My left side and head have given out again."

1881. "Caught a cold which settled on my kidneys. They have troubled me the last year."

"Just after I wrote you, bragging of my health I was taken down with 'malarial fever' that ended in rheumatism, and for a month I have been able to do nothing."

1882. "Run down in health." "Have now done all I can in revising the seven completed chapters of my new book, *before going away*. Leaving full directions for publishing these, in case I do not live to complete the work. I authorize my editors to *rearrange* and *condense* the chapters on —and—, the same being, at present, unsuited to the plan of the work (too sentimental and diffuse, having been, in a sense, obituary articles.) Have also written complete directions for editing my poems, essays and other literary reviews—and put the more important Mss. etc., in our deposit vault."

1883. "Pinned up with rheumatism;" "suffer all the horrors of rheumatic gout and neuralgia; for a month or two really ill and mostly in the house."

"Am in better health than ever before."

1884. "Half broken-down with prolonged strain and consequent nervous exhaustion." "The power of action is gone."

1885. "I am almost dead with letters. They are breaking my heart strings. I wish postage were \$1.00 a letter;" am almost used up, *always* brain-sore, and *cannot write letters*."

"I have suffered from nervous 'reaction' since overworking on my book, and can

scarcely express myself *on paper*, although receiving more than a hundred letters weekly." "I am in a cerebral craze, working nights to get my book ready by July 1."

"Nervous reaction;" "am almost used up, *always* brain-sore;" "wonderfully well for a man recently ill."

1886. "Ill with rheumatic fever;" "prostrated with illness;" "ill and overworked." "Growing aged; my heart is failing me."

"Heart and side given out again; can hardly drag myself to work."

1887. "Sick with nervous prostration and unable to write a line;" "rheumatism who can escape—as the years roll on? But malaria—where on earth did you get that? Certainly not in Newcastle—where, by the way, you seldom tarry. All your complaints doubtless are but the sequel of overwork. I always develop rheumatism and something like malarial symptoms, when cursed with insomnia and brain-weariness." "Sick enough, . . . used up by insomnia."

1888. "Nervous prostration from rush of work and letters."

1889. "In truth, I have been hesitating whether to write briefly, and at once, or to wait until my eyes permit me to say all that I should think might interest you. Those same superbly-loyal and grossly-abused eyes have at last succumbed (small blame to them!) to constant overwork by day and night. I am under an oculist's orders, and write with pain and specialized spectacles." He also qualifies, "even with my astigmatized eyes," his "nervous reaction and head affected by writing," etc. When forced to go to bed his symptoms disappear with disuse of the eyes.

1890. "Rheumatic fever." "Enforced letter-writing pulls on that strained mus-

cle, the heart, so that I have to dictate correspondence when possible." "Have had a long and refreshing night's sleep; have written no letters—have for once had a little rest."

"My dear Dr.—:—Can you do anything for vexatious, but not acute, muscular rheumatism? Last Winter it became acute with me, and you stopped it handsomely with a prescription—I still have some of the medicine, but suppose it too powerful for my present ills. Have had scarcely any rheumatism until recently, when it began in my left arm and shoulder, and is gradually painning me more from day to day, getting down the muscles of the left breast. Weather makes little difference—except that the chilly and damp Board-room is very trying. Within a day or two the pain seems to make me sweat, and is 'weakening'—is worst of all in the armpit and down the inner line of the arm. There. 'No more symptoms,' I hear you cry. If you can give me any mild thing to take that will help me through, prevent the thing from spreading—as it wants to—and not 'drive it in,' I shall be greatly obliged. One needs all his sleep and strength nowadays."

1891. "Languor and inaction;" "Partial heart failure."

"Dear Dr.—:—I enclose my check for \$140 in settlement of the accompanying bill. Poor as I am, the cost is inconsiderable, compared with the value to their possessor. Yours is a wonderful art, and keeps more men alive who *ought* to be in Azrael's clutches than any elixir ever devised by the alchemists."

1895. "Have ceased to work and gone to sleep for three evenings; am better, my first comfortable day in 6 weeks."

1898. "Relapses of neurasthenic troubles, in heart and head, the moment I work."

"Under medical treatment, and forbidden to read and write."

"Beginning to get into a little better shape down town; but can't recover at all from my head trouble and rheumatic gout."

"Left home, to pass some time 'in sanitary' at the Players, and quite time! (Got my old room No. 1, on top floor!)"

"Quiet day, and tried to rest a little. But my head—my head!"

"I *can't* shake off this malady—food, rest, sleep, all seem to fail."

"I steadily have relapses of my neurasthenic troubles, in heart and head, the moment I work, or make much effort. It is hopeless."

In 1899 came the last gasps of dying accommodation with ruined health and wrecked eyes. "A little stronger, but still sleep in terrible cardiac Neurasthenia." "Last year helpless until midsummer; overworked and went to pieces again; for many months confined to bed."

"Doctor thinks my heart less dilated. My relapse of last year's neurasthenia with its horrors has caused me the greatest actual

suffering, but a consequent heart weakness has been the real danger. I am really 'getting round again', but shall have to go very slow in future. Sixteen years have skipped by, with nothing to enable me to tell one from another, since that day in August when my visit was broken up at Lynn Beach. Until this sickness I did not know that they had made me old. And I have not yet seen Carcassonne—not even Athens, nor Rome, nor Hawaii, nor Japan!"

"Doctor said that I have done the only thing possible in going straight to bed after my trip to town Wednesday, that I could not have gone to Fortress Monroe, let alone a long voyage. In fact my heart was so dilated and acting in such a manner that I *could* not get up on Thursday, and have been in bed since then. Dr.—, who has had great experience in such cases, and who helped me so much last year, has taken —'s place, and I am doing my best to give my heart some rest."

"I am afraid it will not be a short pull. — says the case is different from last year, the condition of my general system being due to the heart, which has been overstrained by walking and watching the Market and by anxiety, rather than that of the heart being due to neurasthenia."

"The arterial system, it seems, is somewhat hardened or 'ossified', and he is doctoring me accordingly, so for Tithonus in his oldest old to go a-wooing Hebe. Lying here I have had plenty of time to wonder how the years have slipped by me, so much like one another that I had lost all sense of time. It is a question whether I can now have any of those brave delights which I meant to have before growing too old. I am not 'squealing,' however, and doubtless ought to be satisfied that there is still any 'I' at all."

"After my first month the doctors (it being a publishers' emergency) permitted me to direct my Assistants, provided I would lie perfectly flat—and I have had a staff of three at work in this house ever since. But the effort is in vain and my book has again postponed its appearance, though we shall be at work upon it for months to come. But what is that to a veritable Immortal like you, who postpones his *Master-work* from generation to generation until the perfect day! I want to see that *Mss.* again, and your boys, and your *cara sposa*, and to sit up all night with you, but I simply can't do it until able to do something more than sign myself"—

"I am a perfect Mithridates on poisons. Doctor expects to pull me through, but I can't be active on the Floor any more and must pull in my horns generally."

"Am getting over the Nervous Prostration, the real trouble being as I have said with my heart, which became dilated with continuous strain,—bodily and mental. No organic difficulty, but it skips beats and came very near 'failure.' Am still forced to lie pretty flat, with little prospect of getting on my clothes for some time yet. It is plain I must cut the office until fully restored; and I am in great

trouble for myself and my publishers, as to my literary contract."

"Meantime, although eight weeks ago the doctors had reduced me, till I was of a thinness, and wouldn't promise that I should pull through, I am gaining flesh rapidly, and there is absolutely nothing the matter with the valves of my heart. The trouble has been a partial heart-failure and dilatation. So long as the organ skipped only one beat in four I stood it, but when it got down to making only one beat in three it was no longer a question of choice. When you saw me last Summer I had recovered from months of neurasthenia, the nature of which disease is that you grow stouter and look better until you can't stir hand or foot from weakness. Last Winter it came on me again and this time work and worry had dilated the heart, and the two troubles reacted upon each other. Well, I shall have to go slow, very slow, in future and ought to be satisfied, I suppose, that there is any future at all. But as I think of your splendid and successful health-fight of the last decade, I know that all things are possible for them that love God."

"You know I was ill a year ago and forced to duck under from 'Neurasthenia'; I suffered miseries but recovered sufficiently to work and gamble as usual from July to February. I then went down again, and in the Spring for the first time in my life found that I had overtaxed an organ called the heart. One day it began to skip beats and soon tried, like a poor old horse, to stop altogether. A syndicate of doctors put me flat in bed last May; there I have lain for three months, until a fortnight ago, when for the first time I began to sleep without terrors and to feel like Dante when lifted from the Inferno into the more endurable Purgatory. Since then my heart, to my great surprise, follows its old pace if I don't sit up too long. They tell me that in a week or so I may be able to seek a change of air at East Hampton or elsewhere, but that I can't walk much or hold a tiller or a rod in the near future, if at all; above all, that I must not see or talk with friends—in fact, that I must interest myself in nothing, and go to bed at sunset. You can see, my beloved Limner and comrade, that for me with my nature and zest to visit Arcady under these restrictions would be not only maddening but grotesque."

1900. "Steadily relapsing owing to work and worry over my correspondence."

"I am about leaving the Stock Exchange, after 30 years' service. Can't lead a 'double-life' any longer, so the doctors say." "Last year was in bed nearly six months." "Suffer in cardiac region." "Sleepless." "Head wild." "Losing flesh daily." "To-day wrote 1000 words and have a fresh attack of Angina Pectoris." "Neurasthenia from overwriting."

1901. "Pulled down by the recent heated spell. In fact all people troubled with either neurasthenia or heart-weakness, or with both (as I was), go to pieces with an 80° thermome-

ter. Again, I don't know how high Clinton may be above tide-water, but I take it that the atmosphere with you is somewhat rarefied. If so, you had much better be in the vales, or by the sea, than 'On the Heights.' I am in trouble at much over 1000 feet above sea level. As to nitro-glycerine, I think it a good friend but a bad master. It does soften the arteries, and that relieves the heart's labor, but it also is a most powerful stimulus to the heart action. For that reason our doctor injected it hypodermically in the arm of a plumber, asphyxiated by gas, whom I had kept alive by whiskey, and hot cloths over the heart, until the doctor came. I take it *only* when I have symptoms of *angina*, and don't like to use it as a habit. There is a heart tonic No. 3, and a certain compound, (Fraser's tablets) which did me lots of good in my convalescence. But, my dear boy, no two cases are alike, and I suppose you can only trust to our doctor and possibly consult him as to those remedies. I am asking my Secretary to copy for you the labels on the vials, and will enclose them to you. As I got stronger nothing did me so much good as sponging my neck and chest with cold water,—quickly of course, and only as I could bear it. I do this still, every morning. There is no kick or *heart-break* in cold water, thus applied, being careful not to let it shock or chill you. I begin with tepid water at first."

1902. "First time in my life spat blood." "Very ill all Summer." "Angina." "Not able to write, edit, etc."

From this point to the end there is interest only for the pathologist of organic and lethal diseases, not for one concerned with the functional diseases, (which are the causes of organic disease), with the prevention of suffering, and with the avoidance of premature senility, and premature death. As to the "causes of death" there is, as we all know, far more error than truth in those which with ludicrous solemnity are put down in the death certificates.

For most of this patient's adult life, prior to the last few years, he had smoked tobacco to excess. In 1891 he had already learned that he was getting well because of the return of the relish for tobacco. He had also drunk too much coffee and tea. He had soon grown into the pernicious habit of having tea or coffee served to him while in bed in the morning. He drank a number of "cocktails," etc., or

wine, etc., daily. His hands, therefore, were tremulous, at breakfast, and his coffee was thus sometimes spilled. It is easy to see whence came his "heart-trouble." He was sick in bed for several months, at least three summers, supposedly for "heart trouble," recovering each time because of the much lessened or discontinued use of tea, coffee, alcohol, etc., and because, although at work dictating to assistants, typewriters, etc., his own eyes were not forced to read and write. Sometimes he would disappear—"go in hiding"—for several days or a week.

His lack of nervous-control in later years proceeded to such extremes that a look of intense excitement and pallor would sweep over the face, he would stop whatever was being said or done, huskily gasping, "I cannot talk any more," then sink into a chair, for a few moments of silence, before resuming the conversation or task. He wrote a friend, in 1906:—

"You must have thought my antics very queer in front of the Players' Club. At the close of the day, if I go beyond a certain point of fatigue, it is a very disagreeable fact both for myself and my friends that I suddenly break up, lose my voice, and have not the slightest control of myself. If I cannot instantly lie down, I am like the 'old cove' in Brownell's 'Civil War Ballad,' 'all I ax is to be let alone.' No matter how often this happens, I don't realize what is the matter with me—which is simply the heart giving out—until a rest or a cocktail fetches me out of it, and I can eat my dinner. I had felt perfectly well during the two hours session at your office. Will try not to get caught so again in company."

For perhaps a dozen years prior to his death he had a horror of being buried alive, and, in terror, warned that supposed death might be "coma." The inference draws itself.

How his nervous system had suffered and been wronged, is also suggested by a habit which came down, at least, from mid-

dle life: After working during the evening, up to one or two o'clock, he would throw himself, clothed as he was, upon a lounge until daylight came, when he would go up stairs, undress, and go to bed,—until coffee (or tea) was brought to him. Still another most striking witness to the abuse was night-terrors. He speaks of working out an essay in his sleep. He was "a great dreamer," often arousing the household, and even neighbors, with his nightmare cries, groans, screams, etc. He "fought death every night," he said.

He ate little food, of course, and that "bolted," and without heartiness or relish; and unfortunately the little food taken was mostly sugar and starch. He preferred a variety of other indigestible foods. He was fond of midnight suppers. Naturally, except when on his few short vacations, he took no out-of-door exercise. His reading and writing were done facing the light. It is most astonishing that this patient, apparently, never since boyhood once thought of common-sense hygiene,—due to want of capable advisers. Even the greatest cause of his suffering, eyestrain, is in the last analysis simple unhygiene.

As to the eyes themselves, in addition to life-long blepharitis, itself a certain indication of eyestrain, the earliest noteworthy memorandum by the patient occurs in 1887 when he was 54 years of age, and reads: "For the *first time* my eyes grow old in spite of thirty years' night usage. Bought my first pair of *magnifying* eye-glasses. Sick—unable to do anything." On July 9, 1889: "My eyes have given out—don't coordinate—must get glasses," and two months later: "Those same superbly loyal and grossly-abused eyes have at last succumbed (small blame to them!) to constant overwork by day and night. I am un-

der an oculist's orders, and write with pain and specialized spectacles . . . if I live through, and don't lose my vital powers, as I have lost my money and eyesight, I shall try to enter upon a philosophic, afternoon of life." The report of the visit to the oculist is also, as Carlyle would say, "indicative of much"—"right eye five years *older* than the left—sees farther—does not coordinate. Must have two pair glasses! Another oculist was consulted, "all the forenoon, *undoing* Dr. ———'s work. New tests, new glasses for 'far' and 'near.' Eyes meanwhile going to the bow-wows." "Eyes in a bad way." Five years later (1894) is the entry, "Eyes at last are giving out again." In 1896, "Eyes have badly failed," and the last word is February 1, 1907, "consulted Dr. ———, and changed eye-glasses. My bad eyes give me insomnia." On June 9, 1907, I found the patient wearing:—

R. — C. 0.50 Ax. 90°
L. — C. 1.50 Ax. 90° } Distance

R. + S. 4.00 — Cyl. 0.50 ax. 90°
L. + S. 4.00 — Cyl. 1.50 ax. 90° } Reading

That statement needs qualifying. The eye-glasses (two separate pairs!) neutralized as I have noted, but they were not worn much, and when in use were placed upon the end of the nose, misplacing the axis of astigmatism (fortunately!) some 45°. It was all so funny, so outrageous, so ophthalmologically "scientific."

To a competent oculist or optician this prescription is sufficient to indicate the common story of the patient's injury and of the amazing ophthalmological errors. Especially if compared with what the patient's eyes called for: It is, e. g., extremely seldom that the high astigmatism in presbyopia is myopic and at axis 90°. It is an outrage that, with such a defect, the

glasses should have been ordered, or allowed, in separate pairs instead of in bifocals. It is still more absurd that eye-glasses, instead of spectacles should have been permitted. And the absurdity grows when one thinks that these eye-glasses, if worn at all, were worn astride the tip of the patient's nose, at any angle which accident, haste, or carelessness suggested. Such an axis and amount of astigmatism demands accurate adjustment and constant use to avoid doubling and quadrupling the eyestrain and ocular injury.¹ Moreover the prescription itself shows that the fashion was observed of ordering myopic correction for hyperopia. And to call an eye "older" because it is (erroneously!) said to have a little higher astigmatism! The ludicrous breaks to laughter when it is found that the left eye was blind, and—why, for it, the high power astigmatic and presbyopic lenses? With such ophthalmology in charge, ruined eyes and ruined life, intolerable suffering and unrealized ideals were, for a literary man, inevitable. Alas, that the patient did not see the humor of his report about the second oculist "undoing" the work of the first! Had he consulted one hundred of our guild he would have found that each of us would have "undone" the work of each of the others, and would have demanded that *his* glasses should be worn or disaster would follow. This demonstrates to perfection how scientific is our "science,"—"the ideal of all the medical sciences and specialties."

The accurate error of refraction was demonstrated to be as follows:

¹Moreover he was for years in the habit of using a little "eye-lens," like an Englishman's monocle, and held by the hand before one eye, when reading!

- | | |
|---|------------|
| R. — S. 0.75 + Cyl. 1.00 ax. 180°
=20/40 | } Distance |
| L. Plano, (blindness nearly total) | |
| R. + S. 2.75 + Cyl. 1.00 ax. 180° | } Reading |
| L. Plano | |

It was, of course, too late. Long past noncorrection and malcorrection had done for his eyes what hammering stones or nails with bare fists would have done for the hands. So near, as he well knew, was life at an end, that, wisely, the patient did not get my prescription filled. At any time, after 1865, had his physicians and oculists known their business and done their duty, the man's health might have been made good, and his aims realized. One eye was blind from ametropic choroiditis and hemorrhages, wornout, murdered, from unphysiologic abuse,—i. e., from lack of correction of ametropia by proper lenses; and from doubled injury by wrong lenses. The other eye was half-killed. His systemic diseases (except possibly the tobacco-heart) were all functional, at least in origin, due to the morbid reflexes of eyestrain.

If the patient had been athletic, or had taken even a limited amount of open-air exercise one might suppose a real tuberculosis had been healed. The country night air he abjured, said it was worse for consumption than the atmosphere of the city. The diagnosis during childhood of the disease was therefore an error. Several later examinations and consultations of physicians, even in the last years, demonstrated that the lungs were sound. His last physician knew that the occasional drop or two of blood-stained mucus was not a hemorrhage from the lungs. He died of no necessarily lethal disease. He had, as he explained, been long "living on drugs," all, he said, by the physician's order. The power of physiologic reaction had become worn out and the "sinking

spells" increased during the last year. Financial and private afflictions also pressed him ruthlessly. The eyes alone of all the organs of the body had been unable to withstand. They had vainly tried to save themselves and the whole organism, by functionally incapacitating one organ after another. All resisted, and the furious taskmaster keeping up his demand, the result was the final ruin of the eyes themselves.

It matters little to the alert-minded and humane physician of our day what names were given to this patient's disease. But it was a matter as important as life itself to the patient. He had no disqualifying heart disease. His "angina" was a reflex ocular neurosis, likewise all the hundred falsely-named "neuralgias," "palsies," "rheumatisms," "neurasthenias," etc. He contended, in reference to this last ridiculous and nonsensical name that he was "not a congenital neurasthenic"; that he had "achieved it." As presbyopia came on and added enormously to his sufferings, he began having the routine symptoms of "migraine," one-sided "semi-paralyses," "neuralgias," etc., and the reflexes finding his almost perfectly-resisting body invulnerable at all points and in all organs, were forced back upon the spinal cord, brain, and mind. It's an old story, and millions of this patient's fellow citizens are repeating it with infinite variations—the "theme," however, being always the same.

How is it possible that these so diverse and numerous diseases could arise from the malfunction of a single organ? Well, one might reply, How is it possible to explain gravitation, sensation, or the origin of life, or of any of its functions? Answer enough for the time is that vision is the ultimate condition and intermediate of the

self-motility and perfection of all higher organisms, the *sine qua non* of language and civilized life, the architect of brain-building.

And, for that matter, these diagnoses of a hundred diseases were, and still are the meaningless namings of a blind pseudo-science because the tormented practitioner had and still has no hint of an understanding of their origin, nature, or cure. The farce is still at its height,—but the actors are growing tired and vindictive, while the audience cries for the “curtain.” “Nervous prostration,” “neurasthenia,” “neuralgia,” “headache,” “nervous dyspepsia,” “biliousness,” “migraine,” “insomnia,” “stomach-trouble,” “dyspepsia,” and a dozen such namings, are, in nine-tenths of all cases, the consequences of eyestrain. And of “gout,” “rheumatism,” “pseudo-paralysis,” “tachycardia,” “consumption,” back-and-neck pains, functional cardiac affections, and many such, they are also frequently due to eyestrain, directly or secondarily. “Exaggeration and hobby-riding?” Yes, but of the objectors and deniers! Careful and truly scientific men do not scout at the possible and rational explanation of a mystery. Philanthropic physicians assuredly do not.

A reminder or two may not be amiss: This man’s peculiar business, although indoor, required little or no use of the eyes, so that he could return to literary work in the evening and often work until late in the night with less harm than if there had been ocular labor at near-range during the day. His loved clubs, dinners, and social life, also gave relief of eyestrain. Taught by antiquity, tradition, social custom, and antiquated medicine to ignore the eyes, it is but natural that even such an

acute intellect should ascribe to “overwork,” “anxiety,” “strain,” “worry,” or “excitement” the symptoms plainly consequent upon use of badly “astigmatized eyes,” wretchedly increased by a far more “astigmatized” ophthalmology. It was fitting that the patient with his never-failing wit should have devised a name for himself—“a neuromaniac.” Lastly needs to be remembered that in fortunate and later years literary assistants, typewriters, copyists, etc., sometimes three at a time, greatly lessened the patient’s ocular and reflex injury.

Throughout his life this patient had observed and a hundred times had chronicled the fact that writing and reading brought on any, many, or all of his sufferings; and, also, that with no reading and writing he had perfect health.

We can readily understand how it is that his physicians should not see, refuse to see,—if seeing, deny—this simple inductive and common-sense fact. But it seems incredible that one with the observing mind and the inductive intelligence of this patient should write a thousand such things as these, translating them out of the realities of the most atrocious suffering, without recognizing that the mechanism of seeing (in writing and reading) was the cause of his sixty years of mental and physical anguish. He never asked himself why his friends had no such ills although they read and “overworked” as much or more. It can be explained only by the recognition of the hideous tyranny of traditional and official dogmatism.

Here was a man of the highest endowments, gifted as few have been with splendid intellectual, imaginative, and poetic powers. Proffered positions of power,

editorships, professorships, he did not dare to accept because of his health¹. Their renunciation brought him neither good health nor happiness, and the world was deprived of the great and noble works of art and literature he would have given it. The mere spectacle of his sixty-year long agony torments the sympathetic observer. His own consciousness was burthened and maddened with the misery of it.

And all absolutely needless, all obviable, wholly preventable, any day at least during his last forty years! It does not lessen the tragedy to know that to-day millions of others are enduring these or similar torments, each as blunderingly unnecessary.

SOME REMARKS ABOUT GOITRE AND ITS TREATMENT, WITH REPORTS OF A FEW CASES.

BY

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The thyroid gland consists of two lateral lobes and the isthmus connecting it. From the isthmus sometimes a third lobe arises. As small as this organ is, it seems to be highly important in the complicated machinery of the human organism. What the exact function of this important organ is, we do not know, but we do know that after its complete removal, dangerous symptoms of tetany and cachexia set in ending mostly in death. Kocher, in Berne, was one of the first of the prominent surgeons of Europe who some 25 years ago started to operate on a large scale on the

thyroid gland, attaining for that time some very good results. It is of historical interest to mention here in a few lines the essence of an article published by Kocher in 1883. He stated then that he removed successfully the thyroid gland in 34 cases, but after some time he found out that all those cases where he only removed a part of the thyroid gland were getting along nicely, while nearly all the cases of complete removal showed signs of idiocy and cretinism.

Melnikoff (in *Russky Vrach*, of November 7th, 1909) says, that the removal of the thyroid gland leads to myxoedema, but the removal of the parathyroid gland in its entirety leads to tetany and death. Melnikoff considers the parathyroid gland an organ by itself, not a part of the thyroid gland. According to the last author the function of the parathyroid gland is antitoxic and regulating, as far as general metabolism is concerned. He advises to leave the parathyroid untouched in all operations for removal of the thyroid gland, as he considers the parathyroid gland essential to life. I shall explain in a few words what is meant by the condition called myxoedema. It is a peculiar disease of which the characteristic symptoms are overgrowth of the connective tissue, general swelling of the integument, especially the face, general apathy, diminution of intelligence, slowness of speech and motion, with one word, a cretinoid state.

Werelius (in the *Journal of the American Medical Association*, of July 17, 1909) is of the opinion that the thyroid gland is essential to the wellbeing of the organism, but not to life. He is also of the same opinion as Melnikoff, that the thyroid and parathyroid glands are functionally independent one from another.

¹One of the most remarkable tell-tales of Etymology is the fact that this word, health, which was, and should still be understood as *good health*, is now commonly used as a synonym of *bad health*, or sickness. So common is illness, so rare is wellness!

The tumors of the thyroid gland are divided in malignant and benign, which are goitre, plain and exophthalmic. We shall devote our attention here chiefly to the benign tumors of the gland. Some of the symptoms of goitre are enlargement of the gland, sometimes one lobe is affected only and sometimes both, palpitation of the heart, protrusion of the eyeballs (exophthalmos), oedema, hypertrophy of the heart, etc.

J. C. Newman describes (in the *Lancet* of Nov. 27, 1909) a severe case of exophthalmic goitre that was benefited by X-Ray treatment. In the nose and throat clinic of Dr. Freudenthal at the Beth Israel Hospital in New York, I observed many cases of plain goitre treated with thyroid tablets and all showing wonderful improvement; but a pronounced case of exophthalmic goitre in which the X-Ray treatment was tried, did not show any improvement. Since all the surgeons agree, that thyroidectomy, even if partial, is very dangerous, the mortality very high and that only the most experienced surgeons are able to show occasional good results, we must do our utmost to try and relieve and if possible, cure all those cases that can be treated internally without any surgical interference. Of course very severe cases will have to be referred finally to the surgeon for operation, no matter at what risk.

According to Dr. Riggs and others the severity of exophthalmic cases depends upon the degree or ability of the gland to take up iodine. The more the gland fails to take up iodine, the more severe the symptoms of the disease. That is why iodine or pure thyroid proteids have a good effect on these cases. Women are more often affected with goitre than

men. Goitre may be endemic or epidemic. It is endemic in some mountainous regions, like for instance, the Alps. It is sometimes epidemic in the army, where all regiments are affected. Some believe that in exophthalmic cases there is a condition of hyperthyroidism, it means that there is an abundance of thyroid secretion in the blood—much more than the system requires. (Dr. Hunt in the *N. Y. Medic. Journal* of July 27, 1907).

Werelius remarks (in the *Journ. of the Amer. Med. Assoc.* of July 17, 1909); "that in spite of the enormous amount of work done on the gland, we are still in the outer trenches of the thyroid citadel. The all important subject as it is now presented to us, is a mysterious labyrinth of opposing factors. The gland contains iodine, which seems to have some relation to the physiological activity of the gland. Iodothyryn may contain the active principle of the gland. The removal of the gland causes marked metabolic disturbances, but tetany is not due to removal of the thyroid. There is probably no internal secretion. The gland may have some action on the cardio-vascular system. The thyroid gland may have a detoxicating function and it may have some relation to other ductless glands. It is seemingly functionally independent of the parathyroid."

Of course we have not reached yet in our knowledge of the functions and conditions of the ductless glands a stage where we can make positive statements in regard to many important questions. For instance in some very pronounced cases of exophthalmic goitre it is very often found that at the same time the thymus gland is very much hypertrophied. Is there any relation between these two glands, the thymus and the thy-

roid or the thymus and the parathyroid? Have they a similar secretion or not? Some surgeons are of the opinion that in Basedow cases, complicated with an hypertrophy of the thymus gland, it is very dangerous to operate. There must certainly be some relation between those ductless glands, although it is not quite clear to us yet. I refer the reader to an editorial article which recently appeared in the *American Journal of Surgery* (August, 1910), and which deals very intelligently with this question of relation between hypertrophies of the thyroid and the thymus. Will and Mourigaud (in *La Presse Medicale* of December 18, 1909) have made a study of myxoedematous patients attacked with rheumatism. They have found that articular rheumatism in such patients has an abnormally long course, unchecked by salicylic medication and in one case by thyroid extract. They think it possible that thyroid insufficiency predisposes the patient to rheumatism, although they admit at present they can not prove this theory. Following the opinions of others they believe that thyroid extract in such cases will prove of value.

From the various remedies recommended for the treatment of goitre, the most popular among physicians are the iodides, sodium bromide and chiefly the serum treatment, in the form of thyroidin tablets in doses of 0.1-0.3 three times daily. The thyroidin tablets are supposed to supplement the lack of thyroid secretion in the blood. Where exophthalmic symptoms prevail, I change off occasionally to arsenic preparations, preferably in the shape of sodium cocadylate (1 grm. to 40 pills, 3 times daily), strychnine and iron preparations, occasionally sparteine sulphate, strontium iodide, iodine in very small doses (1-2 drops in water), iodothyrene (0.5-2.0

daily), strophanthus, digitalis, etc. But of course the mainstay and hope in all these cases is the organic treatment. Dr. Yates (in *Denver Medical Times*, September, 1909) relates some excellent results with thyreodectin (Parke-Davis) in treatment of exophthalmic goitre. This product is derived from the blood of animals which have been deprived of the thyroid gland. He administered it in 5 grain doses three times a day. I wish to report about two cases of goitre of considerable enlargement in young girls, one 18 years old, the other 13. They were sisters. I put them under treatment with thyroidin tablets, they both improved under it. As soon as they saw a little improvement they stayed away, but after a while returned again when the gland began to get larger. As soon as I put them under the serum treatment they immediately improved again. I induced them to come regularly to me for treatment till they were cured. They were then coming regularly for about a half a year and the last time I saw them they were nearly normal. But the point of interest in these two cases is, that I tried for one week to give them double doses of thyroidin tablets (about 10 grains to the dose), the result was a very rapid diminution in size of the tumor, but at the same time considerable heart palpitation set in and being afraid to continue with such large doses on account of the possible effect on the heart I returned to the previous doses of 5 grains three times daily. I have seen quite a considerable number of cases of plain goitre cured or improved greatly by the administration of the organic treatment. I lately had a case of a woman 40 years of age, who for about 12 years had a considerable enlargement of the thyroid gland, but paid no attention to it.

She came complaining of feeling uncomfortable in her throat. But I ascribed her uncomfortable feeling to the goitre and put her at once under the organic treatment. In about six weeks all the symptoms disappeared and I discharged her as cured. Of course, as I said before, very obstinate cases with alarming symptoms, where the heart action is interfered with, etc., will have to be finally referred to the surgeon for possible operation. We sincerely hope that in the near future the technique in operation on the thyroid gland will be so much improved by the average surgeon that the result will be as good as for instance in appendicitis cases. Some prominent surgeons have brought the technique of operating on the thyroid gland to such a perfection, that they attained excellent, surprising results. Dr. George W. Crile of Cleveland, O., reports (in *Lancet*, Cincinnati, 1908) remarkable results of his numerous operations in simple goitre and nonmalignant tumors of the thyroid gland. The usual mortality of about 40 per cent. has fallen in his hands to about 1 per cent. He reports that the last 101 of his operations have been done without a fatality. Of course, if all our surgeons could attain similar results with their thyroidectomies all that fear for that operation would soon fade away. I hope that in the near future all our prominent surgeons will be as efficient in the surgery of the thyroid gland as Dr. Crile has proved to be. But till this is a fact, we must walk the middle road of conservatism and try our internal remedies first and risk an operation only in the most extreme cases. So far the results with thyroïdin, the so-called organic treatment, are very brilliant and we read reports daily from physicians all over the land of the beneficial effect of this treatment in goitre cases.

78 McKibben St.

MYXO-SARCOMA OF THE RIGHT FRONTAL LOBE; EXTENSIVE DEGENERATION IN CORD.¹

BY

GEORGE E. PRICE, M. D.,
Philadelphia, Pa.

For the privilege of reporting the following case I am indebted to Dr. F. X. Dercum.

Henry V. White, age 42, bookkeeper. Admitted to the Philadelphia General Hospital, August 10, 1906, complaining chiefly of headache, convulsive seizures, loss of vision and inability to use his lower extremities.

His father, mother, three brothers and two sisters were living and well, with the exception of one sister who had been unable to use her legs from birth.

He had the usual diseases of childhood, with scarlet fever at twelve and typhoid fever when twenty. When seven years of age, he fell into a hole 20 feet deep, landing on the top of his head. He was severely scalded from the hips down at about the same age. He emphatically denied ever having had any venereal disease. From the time he was 17 years old, he drank heavily of both beer and whiskey until he was about 24, when he abstained upon the advice of a physician. For the past three years he had suffered from headache, unaccompanied by nausea, vomiting or vertigo. This headache had been constant for some time prior to his admission. In April, 1906, his eyesight failed rapidly until he became totally blind. His bladder was incontinent. He also gave a history of having had convulsive seizures for the past five years. Until three years ago he had been employed as a clerk.

¹Read before the Philadelphia Neurological Society, April 22, 1910.

His convulsions at the time of admission to the hospital were as follows:—First, a brief tonic spasm of the left face, neck and arm, followed by violent clonic spasms of left face and arm. The head and eyes were deviated forcibly to the left. The right upper extremity and both lower extremities were somewhat rigid, but did not participate in the clonic spasms. Consciousness was at this time retained as the patient could repeat what had been said to him during the attack. He did not bite his tongue, froth at the mouth nor void his urine. The convulsions were preceded by vertigo.

Physical examination was as follows:—Gait and station could not be tested. Pupils equal and reacted to light and accommodation, but not to convergence. There was paresis of the muscles supplied by the right 3rd and 6th nerves. Incessant rotary movements of the eyeballs were observed, the movements being of a wider range than is usually seen in nystagmus. Over the region of the anterior fontanelle was a swelling somewhat larger than a silver dollar, in which pulsation could be detected upon palpation. The right temporal artery was distended, tortuous and could be traced to the vertex, passing posteriorly to the swelling. The tongue protruded in the median line and there was no evidence of weakness of the facial muscles.

Grip with the left hand indicated some weakness, the grip with the right hand being much the stronger. The left arm was slightly spastic; the right arm normal in this respect. There was slight incoordination of both upper extremities. Biceps and triceps jerks were somewhat exaggerated on both sides.

There was no spinal deformity. Abdominal and cremasteric reflexes were present.

On account of extreme spasticity there was almost complete loss of power in the lower extremities. The right leg could be slightly flexed; there was no movement of the ankle and but little of the toes. The left lower extremity was immovable. There was persistent patellar and ankle clonus on both sides. Irritation of the soles of the feet produced clonus and extension of the toes.

Sensation:—He recognized in general the difference between the head and point of a pin; there was some decrease in pain sense in the lower extremities, less in the upper extremities. There was no astereognosis.

Following a series of convulsions during the latter part of August, 1906, he became confused and irrational.

In July, 1907, within a period of four days, he had a large number of convulsions in all of which he was totally unconscious. The convulsions would start in the left side of the face, and from there spread to the left arm and leg, then the right leg; the right arm and side of face being but little involved. He would sometimes pass from one convulsion into another without entirely regaining consciousness. These attacks differed from those observed when he was admitted to the hospital, in the loss of consciousness, biting of the tongue, and voiding of the urine.

Later (October 21st, 1907) it was observed that the convulsions would start with a movement of the left hand, followed by the forearm being flexed, next the arm would be drawn up, the head turned toward the left and then the muscles of hand, forearm, arm and shoulder would go into clonic convulsion. The mouth would be drawn to the left, the lips, the left side of the face, and even the eyebrow participated in the

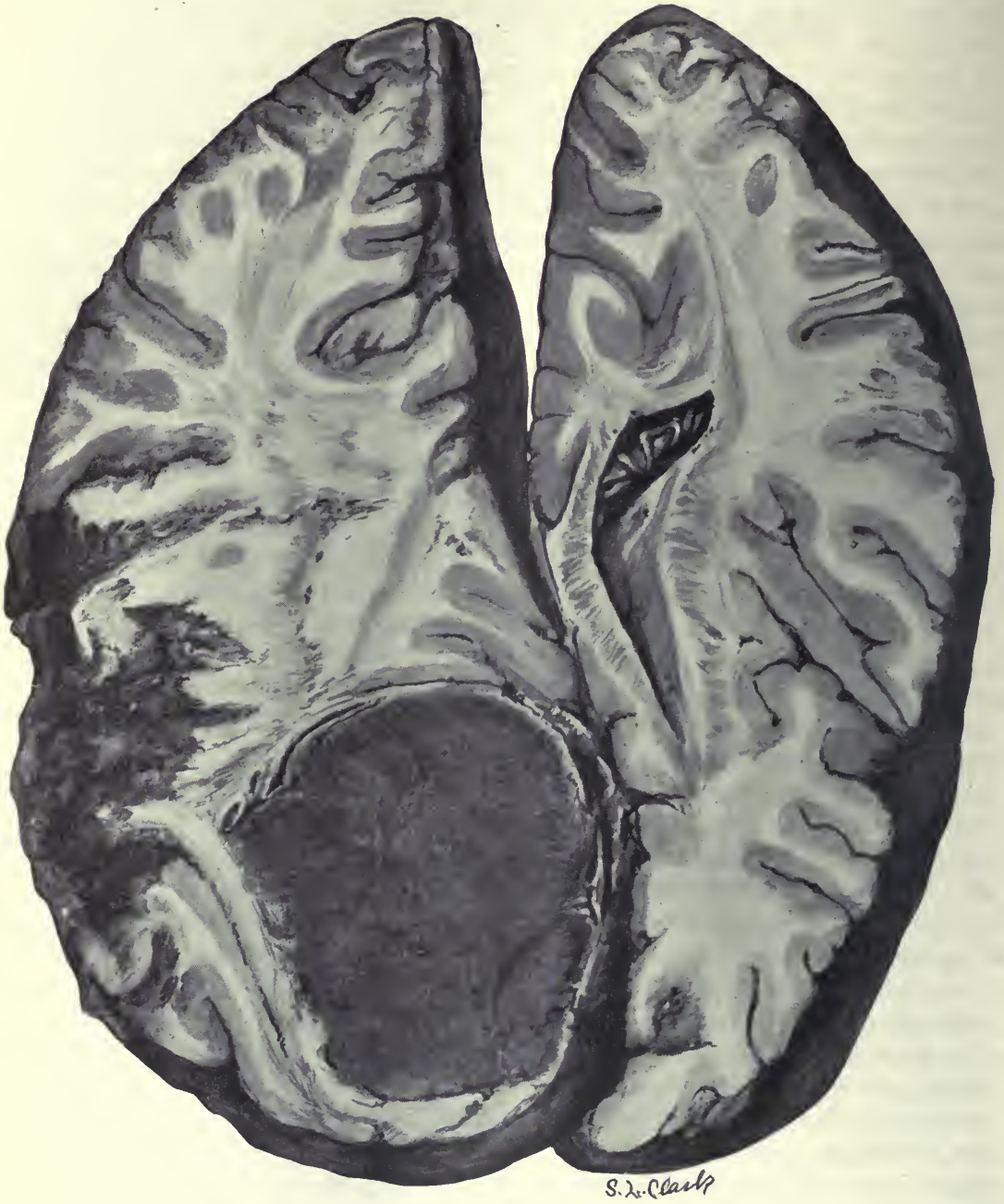


Fig. 1.

Horizontal section through brain showing tumor and area of softening.

convulsion. The eyes would be drawn towards the left. The patient could speak well and was conscious of what happened.

From the above date he had daily seizures of a similar character, increasing in frequency until the 31st of October, when he became unable to swallow and did not respond to any questions. He was then transferred to the surgical ward for operation.

Dercum. This stage of the operation was characterized by excessive hemorrhage from the diploic veins. The dura was then opened and the interior of the skull explored by the finger through a radius of about two inches. No growth was discovered, but the brain substance was pale and showed signs of softening. Protective rubber drainage was used and the flap sutured, the dura remaining open.



Fig. 2.

Section from the cervical region of the cord, showing diffuse sclerosis.

November 1st—Operation by Dr. Steinbach. The patient was partially anaesthetized and an incision about three inches long made over the right Rolandic area; excessive bleeding being noted. The skull was next opened with a trephine, making a circular opening about 4 c. m. in diameter, this operation for surgical reasons being preferred by Dr. Steinbach to the removal of a large osteoplastic lap as advised by Dr.

During the evening the patient became conscious and was able to swallow, although with difficulty.

The following day he could answer questions, protrude his tongue, etc. His temperature which had been up since the operation, was now falling; the pulse, however, remaining high. From this time on he became steadily weaker, dying about noon the third day after the operation. There

were no convulsions or twitchings of any description subsequent to the operation.

The pathological findings at autopsy were as follows:—Edema of lungs; chronic adhesive pleurisy; fatty degeneration of the heart; slight fatty infiltration of the liver; cholelithiasis; tumor of right frontal lobe; softening of the brain involving the right motor area and part of adjacent frontal convolutions.

Gross examination of the brain:—The cortical tissue of the center of the right motor area beneath the perforated dura was absent and the surrounding brain substance softened for a distance of 2 c. m. anteriorly, superiorly and inferiorly, and for a distance of 1.5 c. m. posteriorly. Two c. m. above the destroyed brain tissue and 1.5 c. m. anterior to the fissure of Rolando, was a fairly resistant mass, extending to a point 4.5 c. m. from the anterior margin of the hemisphere. The mass was fairly circumscribed, adherent to the dura, irregularly oval in shape and encapsulated. The tumor measured 6.2 c. m. by 5.5 c. m.

MICROSCOPICAL EXAMINATION.

Tumor:—Sections stained with hematoxylin and eosin and hematoxylin and Van Geisen. A myxo-sarcoma, one of the forms of the sarcoma group infrequently seen.

Optic Nerves and Chiasm:—Sections stained by Weigert and Weigert-Pal methods. Both nerves and chiasm presented complete degeneration, not a single fibre remaining intact.

Cord and Medulla:—Sections stained by Weigert and Weigert-Pal methods—A “diffuse,” rather than a “combined” sclerosis, extending throughout the length of the cord, being most marked in the cervical region, less in the thoracic and least in the lumbar and sacral. Peripheral degeneration was noted, not intense, but most dis-

ting in Gower's tracts. This peripheral ring extended to the medulla and was faintly observed in sections cut from the lower levels of this organ. Higher up in the bulb it entirely disappeared. The greatest change was found in the motor tracts, especially in the crossed pyramidal bundles.

The columns of Goll were but slightly affected in the sacral and lumbar regions, distinctly in the thoracic and markedly in the cervical section of the cord.

Burdock's columns were affected only in the cervical region.

The cells of the gray matter presented slight granular changes, but were otherwise normal.

In the medulla, sclerosis was marked in the pyramids, and was present to a lesser degree in the fasciculus gracilis and Gower's tract.

That degenerative changes in the posterior columns of the spinal cord may be associated with brain tumor was first observed by Mayer in 1894. Since that date there have been numerous contributions on the subject, an excellent article by Batten and Collier appearing in “Brain,” 1899.

These authors examined 29 cases of cerebral tumor with reference to spinal cord changes and found posterior column degeneration in over half of the series. Besold in 1896 reported two cases of brain tumor with degeneration in Gower's tract as well as in the posterior columns, and since then, other observers have recorded changes in areas of the cord (chiefly pyramidal and direct cerebellar tracts) other than the posterior columns. By far the most frequent, however, have been the changes limited to the columns of Goll and Burdock. The posterior nerve roots have also been found degenerated by several observers.

As pointed out by Batten, the cord changes are not dependent upon either the location or character of the growth, as changes in the cord have accompanied tumors of varied character and distribution. It is true that sarcomata have constituted the majority of the tumors in the cases reported, but sarcoma is one of the forms of cerebral neoplasm most frequently met with.

The chief interest lies in the cause of the spinal degeneration, and many theories have been advanced. Hoche, Pick, Kirschgasser, Batten and Collier, believe the changes result from increased intra-cranial pressure with increased tension in the dural sheath. Ursini and Dinkler favor a toxic origin; Besold considers the degeneration due to anemia or cachexia, while Campbell advocates a retrograde degeneration.

Without repeating the various arguments that have been advanced by these writers, I will only refer to what I believe to be the two most probable theories—viz.: increased intra-cranial pressure and toxemia.

Regarding the former theory, cases have been reported with evidence of extreme intra-cranial pressure, yet having no degenerative cord changes, while other cases have been recorded without pressure symptoms yet showing distinct cord degeneration.

The theory of a toxic origin appeals to me as being the most reasonable, as analogous changes have been found in the cord in pernicious anemia, cachexia, lead poisoning, ergotism, pellagra, etc.

The possibility of cord changes with a cerebral growth suggests the advisability of always including a search for cord symptoms in the systematic study of brain tumor cases, and may sometimes be the explana-

tion of symptoms apparently aberrant or irrelevant.

In the case I have reported, the interesting points are the size of the tumor, the extent of the cord changes, and the fact that an osteoplastic flap would have unquestionably revealed the presence of the tumor which as it was encapsulated and reached the surface superiorly and mesially, could have been enucleated.

The pyramidal tract changes may have been retrograde, but I believe the peripheral and sensory degeneration to have resulted from the action of a toxine through the blood vessels of the cord.

1700 Walnut Street.

A SANATORIUM SCHOOL FOR CONSUMPTIVES.¹

BY

DAVID L. SOHN, M. D.,

New York City.

This occasion gives me an opportunity of discussing with you a subject so much deserving of consideration that I look upon it as an agreeable duty. I shall endeavor to take a road on which I hope to find an exit out of the labyrinth, a road whose ultimate end goes beyond the immediate visible and stated one. A fact presents itself: there exists a fallen race—victims of the Great White Plague, the numerous offspring of which grow up to become a plague-sore to society. Instead of a fallen race, we ought to foster a better and a healthier one. The question is: how is this evil to be attacked at the root?

More than twenty centuries ago Hippocrates, the father of medicine, spoke of

¹Presented before the Bedford Alumnae Association at Bedford Sanatorium, July 30th, 1910.

consumption and recognized it as the greatest ill that human flesh is heir to and the one which is responsible for the greatest number of deaths. We know that ever since consumption has been the greatest devastator of mankind. It destroys the human race, from infancy to old age, furnishing its greatest number of victims between the ages of twenty and forty-five, when men and women should be strong and healthy and able to support their families or their aged parents. Instead, however, of fulfilling their duties to home and state, many become a burden to society and those depending upon them must of necessity be taken care of by the charitable organizations.

Think of a yearly mortality from consumption of one hundred and forty thousand, and a yearly cost of more than one thousand million dollars in the United States alone! These will soon be conditions of the past. The battle has been half won, and I feel certain that if the efforts in which we are now engaged gather more force as they progress the disease should, in from twenty-five to forty years, disappear from all civilized countries. It will not be very long before tuberculosis will have become as rare a disease as smallpox is today.

In studying the report of the National Association for the Prevention of Tuberculosis, we find that the average cost of one patient per day in thirty semi-charitable sanatoria scattered in all parts of the United States is about \$1.70. Computing that there are in the United States, at least 300,000 consumptives who are unable to obtain admission to any charitable institutions, it is estimated that the annual cost for the treatment of these persons would be fifty million dollars. The lowest figures show that the country loses at least two hundred million

dollars a year from the incapacity of its consumptives. It would mean a net saving to the United States of one hundred and fifty million dollars a year, if all cases too poor to afford proper treatment in expensive sanatoria were cared for at the expense of the state. And this annual gain does not include the enormous saving that would result from the lessened infection occasioned by the isolating of dangerous consumptives.

Today with our small number of sanatoria and our great army of consumptives it is impossible to combat the disease successfully. It is true that a new era dawned when Dr. Koch discovered the cause of consumption thereby establishing a positive basis for the extermination of the Great White Plague. As yet, however, we know of no specific cure, wherefor we must resort to ISOLATION and EDUCATION.

Let us isolate those whom we can and educate those whom we cannot. In order to accomplish the best results under the present trying circumstances, I advocate the establishment of schools for consumptives, in which the patient will in three weeks derive the benefit of a practical course of instruction at a sanatorium-school devoted solely to this purpose.

The sanatorium-school I have in mind can be built within the city limits or in the suburbs. It should be an institution built and equipped as a modern sanatorium for the cure of consumption, suited for open air, rest, hygienic and dietetic treatment and should be under the supervision of trained physicians and nurses who will carry out the most approved treatment of tuberculosis. There the patients will not only be kept and treated, but they will themselves be instructed in the various phases of sanatorium treatment. There they will be trained how to take care of themselves after

they leave the sanatorium-school. I may venture to say that after a course of three weeks in such an institution, a patient will be well able to take care of himself no matter where he may go to continue his treatment for an ultimate cure. Furthermore, by these instructions, infection to other persons through ignorance and carelessness will be made almost impossible. We know that the untrained and uncared for consumptive constitutes a great menace to his home and work-shop. Very frequently he causes additional lives to be sacrificed because his presence and his ignorance constitute a dangerous environment for his associates.

The laity is beginning to learn that it is no longer necessary to go to the mountainous regions to seek a cure for tuberculosis. We know that pure air is the most essential requisite and wherever we can find it constantly we are reasonably sure to obtain quick results in the treatment of tuberculosis, provided the patient has an intelligent understanding regarding his disease, or is under the supervision of a trained physician. It may interest you to know that in every locality where sanatoria for consumptives are maintained the mortality from tuberculosis has markedly decreased among the villagers since the establishment of such institutions. The reduction in this mortality is to be explained by their imitation, voluntary and unconscious, of the cleanliness and sanitary precautions practised in the institutions in their midst. Since a sanatorium has such a good influence upon the inhabitants outside the institution what are we to expect from those inhabitants inside the institution who are anxious to be cured? A graduate from a sanatorium-school will be able to go to any locality in the vicinity of his home where he can find pure air. He

may even remain in his very home where he may frequently be seen by relatives and friends who will inspire him with the hope and confidence so essential to the consumptive. Thus, this intelligent near-at-home-treatment proves more advantageous too in that it does away with the homesickness and worry which are so often a great hindrance to recovery.

To accomplish the object of our present labors we must infuse a fresher life into the public spirit and appeal to the humane elements in society, to feel, think, labor more earnestly, and above all not to place the entire burden upon the doctors alone. If we contemplate the nature of world-evolution we find that it consists in a leaning of the higher toward the lower, which the higher attracts after having first filled it with its power, its life—that it consists in the extension of the participation of all mankind in the same bread and the same wine. Thus the phenomenon of the regeneration of the world manifests itself, even in our days, in the stir of the political life of the free. This consciousness must be roused in every man and every woman so that those more favored on earth will unite in the active work of making the poor consumptives hopeful and happy and of increasing their chances of recovery. And this great work can be accomplished best by the establishment of sanatorium-schools for consumptives.

432 East 84th Street.

SURGICAL HINTS.

In acute posterior gonorrhea with frequent urination and all portions of the urine cloudy, if these symptoms do not respond to irrigations of the bladder, gently massage the prostate—the expression of pus will indicate repeated massage as the treatment to be pursued.—*Amer. Jour of Surgery.*

THE PHYSIOLOGICAL ACTION AND THE STANDARDIZATION OF DIGITALIS.

BY

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New York.

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N. Y.

Digitalis is unquestionably one of the most important drugs we have, inasmuch as it is possessed of a definite physiological action which only rarely fails in the proper cases. With a better understanding of the mechanism of the heart action, the proper indications and contraindications are clearly defined and despite active pharmacological research, no satisfactory substitute has been discovered.

Briefly stated, digitalis stimulates the pneumogastric nerve centrally and peripherally, causes constriction of the peripheral blood vessels with rise in blood-pressure and probably also constricts the coronary vessels. Its most important action, however, is its increase of the irritability, force of contraction and tonicity of the cardiac muscle, with slight diminution of conductivity. The indications and contraindications can be very easily deduced from this physiological action. Thus, digitalis is useful in broken compensation and acute dilatation and occasionally in persistent tachycardia. The condition of the heart muscle should always be carefully investigated, for with pronounced fibrous or fatty changes, the drug may not only be ineffective but actually harmful. This applies particularly to cases where the myocarditic changes affect the atrio-ventricular muscle bundle described by His leading to the condition known as heart-block. The conductivity is here dis-

turbed so that not every auricular contraction will reach the ventricle, and digitalis will aggravate the condition since it still further lowers the conductivity. In cases of coronary sclerosis, digitalis would *a priori* be unsuitable because it tends to contract the coronary vessels, but this action can be overcome by the simultaneous administration of such vaso-dilators as the nitrites or diuretin. In cases of arrhythmia due to disturbances in the auricles or sinus region, digitalis should be employed with caution, but in the condition of auricular paralysis, described by Mackenzie as "nodal rhythm" excellent therapeutic effect has been seen. It is evident that it is no longer sufficient to say that digitalis is a heart tonic, but that every case must be carefully analyzed by venous tracings, orthodiascopy and, if possible, by the electrocardiograph, before the drug is prescribed with the expectation of doing good.

The study of digitalis has always fascinated pharmacologists, yet, despite a fairly large literature, the authorities are not yet agreed as to the active constituents. It seems clear, however, that digitoxin, digitalein and digitalin are distinct glucosides which all exert an action upon the heart, while digitonin is of little value and is apt to derange the stomach. The glucosides are combined with tannic acid which makes them more acceptable to the stomach. Within recent years the tendency has been to supplant crude drugs by their active principles and in many instances this is no doubt a great advantage since it permits more accurate dosage and more rapid action. Thus, quinine is now used more often than calisaya and strychnine in preference to *nux vomica*. With digitalis, however, the conditions are more complicated, and the question of the most suitable preparation had to be solved in another way.

Inasmuch as all three potent glucosides possess a distinct action upon the heart, the full digitalis effect cannot be obtained by prescribing only one. Furthermore the free glucosides never agree as well with the stomach as the tannic acid compounds present in the native drug. The use of the isolated glucosides would be imperative only where hypodermic medication is necessary, but even here we have a more potent and more rapidly acting drug in strophanthin, especially in its purified, crystalline form.

While therefore the full effect of digitalis can only be expected when the drug itself or one of its preparations is prescribed, there are obviously many disadvantages, which have only recently been overcome. Much depends upon the care exercised in collecting the leaves. In the case of certain drugs, such as cinchona bark, careful cultivation has increased the percentage of active ingredients, but with digitalis, a more potent drug is obtained from the uncultivated plant. Other precautions are also necessary, thus leaves from a hilly region should be preferred and the time of gathering should be just before flowering. After long periods of rain, an inferior grade will be obtained and adulterations are quite common. The sins committed by the pharmacist may also be numerous. The drug may be exposed on his shelves to light and air or may be over a year old. In case of the powder, it is difficult to determine if the almost inert stems and ribs are present and adulteration with inert substances is very easy. As long as no accurate pharmaceutical assay is possible, it follows that the strength of the drug and of its galenical preparations will vary within wide limits. It is thus clearly evident, that many clinicians prefer the ad-

ministration of the active glucosides despite their obvious disadvantages.

The choice of the most satisfactory galenical preparation has caused considerable discussion. In Germany, preference is given quite generally to the powdered crude drug and the infusion. If proper care has been exercised in collecting and preserving, the results obtained with the powdered crude drug are certainly satisfactory, except that the deranged stomach of patients with heart disease very frequently will not tolerate it. In the infusion, as prepared according to the United States Pharmacopoea, water is used as solvent. The resulting preparation will not represent the entire drug, since the full extraction of all the glucosides requires alcohol. Herzfeld therefore recommends the addition of some alcohol before the leaves are strained out. Many druggists have no conscientious scruples in preparing their infusion from the fluid-extract, though an inferior preparation will thus result. The fluid-extract and tincture have been found to vary within very wide limits, even when obtained from reliable manufacturers. The dried extract, when prepared at a low temperature and from full-strength leaves is considered by many the most satisfactory preparation.

It follows from the above that digitalis is a potent drug, preferably used as such or in the form of one of its preparations. The potency of every new preparation is, however, an unknown factor until the degree of reaction on part of the patient has been determined.

By means of a special process it has become possible to extract the tannic acid compounds of the active glucosides, minus the harmful digitonin and inert matter. The same idea has already been followed

in removing inert matter from other drugs, such as licorice juice and ox-gall (succ. liquir. dep. and fel tauri dep.). Methods have also been described to remove gastric irritants from extract of cascara and senna leaves. It only remained to standardize the extract and this could be successfully accomplished by the physiological experiment on the frog. It is well known that after a sufficiently large dose of digitalis glucosides, the heart of the frog will cease beating, owing to systolic arrest. If frogs of the same size and species are employed, this reaction is quite uniform and hence better suited than any quantitative assay to determine the strength of any given preparation. An ideal preparation of digitalis would therefore be an extract containing all the active glucosides, freed from digitonin and inert matter and standardized by means of the physiological experiment so as to be always uniform. A preparation of this kind, extensively used by the author, is digipuratum, which has been so standardized as to be the equivalent, weight for weight, of the best powdered digitalis. Its dose is therefore the same as that of strong powdered digitalis itself.

The results obtained by the author with digipuratum in hospital and private practice, have been eminently satisfactory, in fact all that the theoretical considerations of this drug would lead one to expect. Patients with heart disease frequently suffer from congestive catarrh of the stomach, but the administration of digipuratum never aggravated this or provoked vomiting, probably because the drug is insoluble in the gastric juice and not absorbed before it reaches the intestines. The action is very prompt and reliable and the effects on pulse and flow of urine are apparent

much sooner than after other preparations. The most important property of digitalis, to increase the tonicity of the heart muscle is especially apparent and cumulative or toxic effects, so commonly described, were virtually absent when given to the proper cases. Where no extensive myocardial changes were present, the edema, ascites and congestive catarrhs of the stomach, intestines and lungs rapidly disappeared. Many patients who could not tolerate any of the other preparations of digitalis, were soon benefitted and many who formerly did not react, soon showed the effects of improved circulation.

Toxic symptoms were not noticed, if the usual care in prescribing digitalis was observed, and owing to the fact that digipuratum is a drug of definite potency, its action could at all times be accurately controlled. When the vasoconstrictor effect is not desired, digipuratum may be combined with diuretin like digitalis itself.

Digipuratum is supplied very conveniently in tablets, each corresponding to $1\frac{1}{2}$ grains of best digitalis leaves. As a rule, 12 tablets are sufficient for one course of treatment. Thus, 4 tablets may be given the first day, 3 tablets the second and third day $\frac{1}{2}$ hour after meals and 2 tablets the fourth day. The dose must however frequently be determined for each individual case and, if necessary, the treatment should be repeated after a few days' rest. The following formula is especially serviceable where there is dyspnea with scant flow of urine:

R̄ Dioninigrain $\frac{1}{4}$ - $\frac{1}{2}$
Digipuratigr. $1\frac{1}{2}$
Diuretinigr. XV

M. ft. pulv.

Sig. One powder four times a day.

Good results will be seen from the following in coronary sclerosis with tendency to angina pectoris:

R Digipuratigr. 1½
Sodii nitrit.gr. 2

M. ft. pulv.

Sig. One powder three times a day, or

R Digipuratigr. 1½
Diuretinigr. X

M. ft. pulv.

Sig. One powder three time a day.

All in all the introduction of digipuratum marks a distinct pharmaceutical progress. The chief advantages are safe dosage and absence of undesirable constituents. By the use of such a physiologically standardized preparation, it can readily be determined if the dose used is too small and the cumulative effect of too large a dose can easily be avoided.

106 E. 81st Street.

ADDRESS.¹

BY

EBERHARD W. DITTRICH, M. D.,

Instructor in Diseases of the Skin, New York
Post-Graduate Medical School and Hospital;

Dermatologist German Odd Fellows'

Home and Orphan Asylum; Physi-

cian Northwestern Dispensary-

Dermatology.

Ladies and Gentlemen:

It is indeed, with much gratification that I greet you, members of the Yorkville Medical Society and open the first regular meeting of our organization.

I can offer no more fitting expression of our purposes in organizing our society than to quote the preamble of our constitution, "We, the charter members of the Yorkville Medical Society, in order to promote

the interest of Medical Science, mutual helpfulness in our medical duties, and more perfect friendship and fellowship among our friends and colleagues, organize this society."

As many of you know, there are several medical societies, on the east side of our city. The lower east side has two separate and independent ones, while the Harlem Medical Society prospers to the north of us. Between these, are our friends and neighbors, and as near as we can learn, within the boundaries prescribed by our constitution, we have 380 physicians who had no local society where they might learn to know their near neighbors and profit by their mutual helpfulness.

With some vanity, I confess my own labors in forming our society, but I credit others with earnest, splendid work in the perfecting of our association, and it is a matter of sincere pride that I find myself associated with these men, and that, in their judgment they selected me as the executive head of our society.

It is true, that we are in our infancy as a society, but we will grow strong and great, for, with the wise guidance of those men who have formed the nucleus of our organization, we can make no error; while the singleness and sincerity of our purposes, will draw the best in our locality to our membership. We solicit no one to join us, yet we offer welcome to those physicians who live within our boundaries, and who will earnestly co-operate with us in furthering our purposes.

No member must feel a stranger among us, nor be fearful that his efforts will be unkindly considered. The weak we wish to make strong; the strong, bold, and every member must feel, that while others may differ from him in their medical conclu-

¹Address of the President of the Yorkville Medical Society.

sions, it is his duty "not to hide his light under a bushel but let it shine forth," and if there be some matter or knowledge of his, that he believes will be of usefulness to other members, let him not hesitate to bring it to the society for consideration. Let not youth, or inexperience be a drawback, for as age guides the young, so does youth awaken maturity.

Do not let our proceedings become routine or "hum-drum," let them be bright and interesting as well as instructive. In these days of wonderful discoveries in the scientific work of curing the sick, and the vast amount of literature that comes under the observation and study of physicians, it not only is prudent, but it is necessary, that we be not too receptive, but be analytical of all medical matters; and therefore all discussions of scientific papers and articles must be given and received only in that way. Nothing should be right, because we wish it so, but because it is so. No member must feel unkindly should any paper he may offer be declined by the executive committee, because it is their positive duty not to burden the members with any matter, which in their judgment, is of not sufficient merit to be presented at one of our meetings.

Before closing I wish to announce, that our proceedings will be recorded in the AMERICAN MEDICINE, and should any member desire to obtain reprints from the papers read, he will be able to do so at a very moderate rate from the publishers.

153 E. 81st St.

SURGICAL HINTS.

A small swelling in the parotid region may be an inflamed lymph-node. A single focus of tuberculous lymphadenitis is sometimes to be found here.—*Am Jour. of Surgery.*

ETIOLOGY AND DIAGNOSIS.

The Diagnosis of Acute Intestinal Obstruction.¹—The occurrence of sudden abdominal pain, followed by cessation of bowel movement, without material rise in temperature, but with increasing frequency of the pulse, with abdominal distention, often local in the affected loop of bowel (Wahl's sign), and accompanied by visible peristalsis, often with nausea and vomiting, and without the tenderness and involuntary rigidity seen so typically in acute appendiceal, gall-bladder, and stomach lesions, should suggest acute intestinal obstruction with so much probability that we should avoid opiates if possible, withhold all food, and all cathartics by the mouth, and attempt to relieve the obstruction by enemas. At this time, as Ewald has shown, the stomach contains matter regurgitated by reverse peristalsis from the upper bowel, and the stomach washings should be watched for the first appearance of fecal odor.

Obstructions high up in the canal are generally characterized by greater pain, earlier nausea and vomiting, more flattening of the abdomen, scanty urine, and earlier collapse. Low obstructions are characterized by greater abdominal distention, oftentimes with prominence of certain portions of the abdomen, indicating that the entire colon is distended, or only certain portions of it, or only the small bowel. The prominence of a "horseshoe" of distended bowel in the course of the colon is very striking evidence of obstruction low down, while the absence of this and the presence of smaller prominent loops in the central abdomen suggests that the lower small bowel or cecum is affected. Previous operation suggests obstruction by bands or adhesions. A history of gall-stone disease suggests the possibility of obstruction by a large stone escaped by ulceration into the bowel. In the insane we think of obstruction through foreign bodies swallowed. In patients with diarrhoeal and dysenteric diseases the possibility of obstruction through masses of bismuth or other insoluble medicament is present.

¹J. N. Hall, M. D., *Am. Jour. of the Med. Science*, Nov., 1910.

The presence of blood in the stools and a tumor in the abdomen in a young patient with obstruction of sudden onset suggests intussusception.

The beginning of the trouble after such exercise as skipping rope and certain contortions indulged in by boys in the gymnasium suggests a twist. A tuberculous history and the presence of palpable glands suggest obstruction by an acute process connected with a tuberculous peritonitis. A history of typhoid fever, duodenal ulcer, syphilis, or dysentery suggests a gradually contracting cicatrix with a sudden obstruction at the end. Gradual loss of weight and enlargement of accessory glands speak for cancer. Syphilis and toxemic conditions suggest the possibility of mesenteric thrombosis, and serious valvular disease and endocarditis the chance for mesenteric embolism. Blood is generally present in the stools in this class of cases, and was freely vomited in Case XX of my practice.

Early Symptoms of Tetanus.¹—Evler (*Berliner klinische Wochenschrift*), in a serial article on tetanus, discusses first its early symptoms. He cites authorities like Rose and von Leyden. The consensus of view is that trismus must necessarily be present to insure a diagnosis of tetanus. Yet cases are on record in which trismus was absent, although tetanus of the arms, face and trunk was present. The author finds that the early symptoms of tetanus are transitory, vacillating, alternating. They comprise restlessness, timidity, night terrors, bad dreams, dysuria, dyspnoea, etc. The facial expression changes; there may be nosebleed, night sweats, prostration, yawning, vertigo—all symptoms of nervous irritability or prostration. Of more value are certain surgical symptoms. Thus swelling of an extremity, despite high elevation, is suspicious. The member in question may also be hot and painful. Lymphangitis commonly coexists. The blood-pressure is higher on the affected side. The injured limb shows such phenomena as contracture and tremor. Certain muscle groups are in a state of tonic spasm, often latent; that is, spasm appears only upon exertion.

The Symptoms of Exophthalmic Goiter.¹—These may be divided, according to Woodward, for purposes of description, into circulatory, nervous, thyroid and ophthalmic.

Of these, usually the circulatory symptoms are the earliest developed. The most important of these is tachycardia. The pulse may range from 90 to 120, and in severe cases to 150 or even 200 per minute. It is usually regular, though Hewlett reports five out of a series of fifteen cases in which irregularity was present. Murray reports only 12 out of 180 cases, and A. Kocher only 4 out of 59 cases with irregularity. The apex beat is very forcible and diffuse, and gives the idea that the heart is greatly enlarged, because of its force being transmitted to the chest wall external to the apex proper. Some enlargement of the heart is usually shown by percussion, and, of course, this is more marked in the late stages of the disease.

In some cases murmurs are heard, especially in systole. These may be due to the dilatation of valve orifices, or in some cases to disease of valves. A sense of palpitation is often complained of, and there is often a visible pulsation in the abdominal aorta and femoral vessels. Venous and capillary pulse can often be made out. Flushing of the face and erythema of the skin are frequent.

Of the *nervous symptoms*, a fine tremor is the most generally present. It is very fine, eight or nine to the second. Vertigo, headache, restlessness, insomnia, increased irritability and hysterical manifestations are also seen, and in some cases acute psychic disturbances are present.

The thyroid is almost uniformly enlarged in these cases, though it may come on late in the disease. The enlargement is symmetrical usually, and that it is in part due to dilated blood-vessels is shown by the pulsation often present.

The eye symptoms are, in the first place, exophthalmos, the eyeball being pushed forward in its orbit sometimes to a marked degree. The palpebral orifice is widened so that the upper lid does not cover the entire sclera, giving a staring appearance to the face. Winking of the lids is seldom done,

¹Medical Record.

¹H. L. Woodward, M. D., *Lancet Clinic*, Nov. 5, 1910.

and when the eye turns downward the upper lid does not follow. Usually there is no limitation of the movements of the eyeball, but at times there exists a difficulty in keeping them converged. Ulceration of the cornea may occur because of excessive dryness, and sometimes panophthalmitis. The ophthalmoscope may show pulsation of the retinal vessels.

Other symptoms are occasional fever, diarrhea or vomiting, and at times a scleroderma may develop. Albuminuria or glycosuria is sometimes present.

One symptom, probably due to the increased moisture of the skin from dilated peripheral vessels, is a diminished resistance in the skin to the galvanic current.

The cases may be acute or chronic, but the majority are chronic.

There is frequently a marked and rapid loss in weight and strength, probably due to increased metabolism.

The Diagnosis of Twin Pregnancy.¹—

There is no lack of signs says an editorial writer in the *Lancet* which may indicate the presence of a twin foetation; it is their certain recognition which is so often difficult. The finding of two bags of membranes, the existence of a furrow between the two foetuses, the presence of too many small or large foetal parts, the large size of the abdomen, the apparently excessive length of the foetal axis, and the auscultation of two hearts beating at different rates, while all valuable diagnostic aids, may not be present or their significance may be misunderstood. The diagnosis of a twin pregnancy before labour sets in is a matter of no little importance to the mother and cannot fail to bring credit to the medical attendant. In spite of this, in a very large percentage of the cases the condition is overlooked, and any addition to our knowledge therefore which will prevent such mistakes in future is to be welcomed. Dr. C. J. Gauss believes that he has discovered a sign of considerable importance in this connection, and in a paper recently published in the *Zentralblatt für Gynäkologie*¹ lays stress upon the presence of an anterior parietal presentation in the case of the first of twins when it is presenting by the head,

as a point of considerable diagnostic value. As a result of the small size of the head and of the leverage action produced by the second child upon the body of the first, due to the want of space in utero, he maintains that this presentation is to be met with in so large a proportion of twin pregnancies as to render it of great value. In several cases where the diagnosis had proved impossible by the abdomen the presence of such a presentation has led him to the successful recognition of a twin pregnancy. An anterior parietal presentation, corresponding as it does to a marked degree of Naegele's obliquity and associated with abnormally easy recognition of the anterior ear, occurs so infrequently in a normal pelvis as to render its occurrence in such conditions most suggestive of a twin pregnancy. This sign has the drawback that it is not available until labour has commenced, and it is, of course, only present when the first child presents by the head, but such a presentation occurs in some 70 to 80 per cent. of all twin pregnancies. It should therefore, if further observations tend to show that it is as constant an occurrence as Dr. Gauss supposes, prove of considerable value in helping to make a diagnosis in doubtful cases of multiple pregnancy. The question is well worth further investigation, and in our opinion this physical sign has only one drawback—namely, it involves for its recognition the necessity for making a vaginal examination, whereas most of the other signs of multiple pregnancy can be recognized when present before the onset of labour and by examination of the abdomen only.

The Diagnostic Importance of the Pulse Rate in Appendicitis.¹—

The pulse rate is a very important guide in determining the necessity for operation in acute appendicitis; but sometimes it should be altogether disregarded. If distinct pain and tenderness have not abated after twenty-four to thirty hours (especially if vomiting and more or less rectus rigidity coexist, but even without these) it is proper to operate without waiting further, no matter what the temperature and pulse rate; a gangrenous appendix may be found in a patient whose pulse is 70 and temperature 100°!

¹*Zentralblatt für Gynäkologie*, No. 40, 1910, p. 1281.

¹*American Jour. of Surgery*.

TREATMENT.

Ehrlich-Hata's "606."¹—McDonagh in a very complete and interesting letter on the Pathology of Venereal Diseases gives his experience with "606" as follows:

"A new drug which bids well to revolutionize the present treatment of syphilis is engaging everyone's mind, the lay as well as the medical, and it is owing to the kindness of Professor Ehrlich that I am able to give an account of my small practical experience of its use. It is the outcome of years of patient work, and although christened with a somewhat unsightly name—dioxidyamidoarsenobenzol—it is popularly known as Ehrlich-Hata's preparation No. 606. Its aim is not only to cure syphilis after one injection, but also to prevent any recurrences. How far, then, are these ideals fulfilled?"

That the lesions disappear in a most marvellous way may be seen from the following cases that I have had under my care:—

CASE 1.—A man with a chancre, and no secondary symptoms, received 0.45 gm. of the yellow powder, and within 48 hours no spirochætae could be found. After four days the chancre had cicatrised beyond recognition, and now, more than a month since the injection, no secondary symptoms have appeared.

CASE 2.—A man was admitted with a large indurated chancre of the prepuce, polyadenitis, sore throat, nocturnal headaches, and a macular rash.

Patient received 0.45 gm., and within 48 hours the headaches had vanished, throat was normal, rash on the road to disappearance, and the chancre had commenced to cicatrise.

In five days the rash had completely disappeared, and within ten days the sore had not only healed, but the induration was scarcely palpable.

CASE 3.—A case of malignant syphilis contracted in 1905, and in spite of almost continuous treatment, patient was admitted to the Lock Hospital with redness and swelling, and gummatous ulceration of the exterior and interior of the nose, ulceration of pharynx and palate, with a large perforation of the latter.

Eight days after patient had received an injection of 0.45 gm. the nose had resumed its normal size, the redness had almost vanished and the ulcers were healed; the discharge from both the nose and pharynx had ceased; naturally the hole in the palate had not diminished in size.

The patient a fortnight later informed me that his friends scarcely knew him.

CASE 4.—Another case of malignant syphilis similar to the one above, except that the patient had elephantiasis of his lower lip with extensive ulceration.

0.45 gm. was injected, and within 14 days the swelling had completely gone down and the ulcers cicatrised over.

CASE 5 was one of special interest owing to the fact that eye complications were known to supervene after using the arylarsonates. The patient besides having the usual symptoms of secondary syphilis had a bad iritis of the right eye.

After an injection of 0.45 gm. the photophobia had almost disappeared in 24 hours, and three days later nothing beyond a slight conjunctivitis was perceptible. The pupil was circular, reacted normally and there were no synechie.

CASE 6.—A case of congenital syphilis. The patient aged 15 years, under the care of Mr. Elmslie, received 0.3 gm. for severe gummatous ulceration of the left thigh and leg. The ulcers on the leg reached to the periosteum and bone. The patient had been treated for a long period with mercury without effect, and within ten days after injecting No. 606 the ulcers had healed.

I have had 20 cases under treatment; in only one was there albuminuria, which appeared a few days after the injection and did not last longer than 24 hours. Two cases had a localized toxic oedema of one buttock, which quickly resolved under frequent applications of lotio plumbi.

Whether recurrences will appear or not cannot definitely be answered, since we have not been able to watch our patients a sufficiently long time; years must elapse before a definite statement can be made.

A few cases have been reported in which fresh symptoms arose, and cases have occurred early in the secondary period which did not respond to treatment—two of the latter I treated myself. (The symptoms have since disappeared.)

The reason for such was owing to the dose being too small; at least 0.45 to 0.6 gm. is required for the fresh cases, while 0.3 gm. suffices to heal up any late lesions, however severe and old they may be.

There are already several methods of preparing the drug for injection, but owing to the pain being so much less when the sodium hydrate is neutralised I now always proceed as follows:

Since the powder will not act except as a mono- or a bi-sodium salt, and since it is not stable in this form, the drug is sent hermetically sealed, to be prepared fresh just before use.

¹J. E. R. McDonagh, F. R. C. S., *London Practitioner*, Nov., 1910.

Place the powder in a glass mortar and add $\frac{1}{2}$ c.c. of ethyl alcohol to every one-tenth of a gramme of the powder used. Dissolve as far as possible and then add while stirring 10 c.c. of very hot water; rub well with the pestle until a clear yellow solution is obtained; then add slowly 1 c.c. of normal sodium hydrate solution (40 grms. to the litre) for every 0.1 grm. of the powder and mix well; colour red with three drops of a $\frac{1}{2}$ per cent. alcoholic solution of phenolphthalein and titrate with normal acetic acid (60 grms. to the litre) until the red colour has completely disappeared. A fine yellow emulsion now remains. Finally, add a few drops of normal sodium hydrate until a faint rose tint returns and remains—so that the solution is just alkaline. Inject half the quantity of the emulsion into each buttock; although the steps taken may be the same in every case, little hard lumps may form in the emulsion which block the needle during injection; the prevention of these lumps is best secured by dissolving the powder well in alcohol and seeing that a clear solution is obtained with the water before the sodium hydrate is added.

Owing to the disastrous results which were obtained with the arylarsonates, this new preparation has been received with a certain amount of fear and an undue amount of scepticism. Its non-toxicity is surely proved by healthy animals behaving indifferently to an injection, and that the toxic dose is only 0.1 grm. per kilo.; therefore a man would require between 6 and 7 grms., and the biggest dose so far given has not exceeded 0.7 grm.

There are certain people who show an idiosyncrasy to arsenic, and it is quite possible that an injection of No. 606 might produce alarming symptoms; many patients are by a single injection rendered over-sensitive to the drug, and such patients again might show toxic symptoms on repeating the dose.

Fortunately we have a means of testing this over-sensitiveness, or anaphylaxia, since either a conjunctival reaction after Calmette, a cutaneous reaction after Von Pisquet, and an intra-dermal reaction after Wolff-Eisner may be obtained with the solution used or what I always employ, a solution of arsacetin, 0.3 grm. in 3 c.c. of

water; patients giving a positive reaction should not receive an injection."

The Treatment of the Hookworm Disease.¹—Lindeman gives the following treatment for hookworm disease: The patient should have nothing to eat from noon of the day previous to the administration day of the thymol. On this day and the day following, fat of any kind, milk, cream, butter, bacon, etc., should be avoided. Whiskey, beer, wine, and oils are absolutely interdicted, as all these can dissolve thymol. Early in the evening of the first day sufficient Epsom salts should be given for efficient purgation. It is important that the bowels should be well moved. Early the next day the dose of thymol decided on should be divided into two parts and given one hour apart. It is best administered in cachets triturated with equal parts of milk-sugar, and before using, the cachets should be well softened in water until they are of the consistency of a raw oyster. It is best to put the patient to bed, on the right side. The thymol should be retained for from two to five hours, unless distress or symptoms of intoxication occur. Epsom salts should then be used for flushing the bowels and expelling the drug. The following dosage as outlined by the State Board of Health of Florida is considered safe to use: Under five years of age, up to 8 grains; from five to ten years of age, 8 to 15 grains; from ten to fifteen years of age, 15 to 30 grains; from fifteen to twenty years of age, 30 to 45 grains; from twenty to sixty years of age, 45 to 60 grains; over sixty years of age, 45 grains. In determining the size of the dose the apparent age and the real weight of the child should be considered. The nauseating effects of Epsom salt can be considerably lessened if dissolved in the smallest quantity of warm water possible and swallowed; this to be then followed by a large quantity of any mild fluid, even water. The mixing thus takes place in the stomach instead of in the glass. The patient may begin to eat after the bowels are well moved on this day. It is best that they should eat sparingly and avoid distress from engorgement. The same precautions should be observed on this day regarding fats, oils, alcohol, etc. Once

¹M. D. Lindeman, M. D., *Jour. A. M. A.*, liv: 1910.

the worm is eradicated, fresh air, sunshine, plenty of water, and proper food are the chief requirements for the treatment of the anemia of hookworm disease. Iron, arsenic, tonics, and ferruginous vegetables are indicated. The patient should be treated at intervals of one, two or three weeks until the stool is free from eggs or parasites. The more debilitated patients should be treated at longer intervals. Betanaphthol is not so toxic to the parasite as thymol, but has a more toxic action on the kidneys. The anthelmintic properties of turpentine are less than those of thymol; besides turpentine is less desirable because of its ready absorption and liability to produce acute nephritis. Pressed thymol tablets should never be used.

The X-Ray Treatment of Cancer.¹—

Pusey in his comprehensive article says: No one who is not blind to facts can doubt, if he will take the trouble to investigate, that carcinomatous tissue in the skin can be destroyed with x-rays. On the basis of a large experience in primary and secondary carcinomas of the skin, he states he is willing to maintain that carcinoma tissue in the skin can be destroyed by exposure to x-rays as by any mechanical or chemical method; that the method, therefore, can be used with assurance, and that the results as regards permanency are fully as good as those obtained by any other methods. There are certain theoretical advantages which the use of the x-ray offers over other destructive methods.

First.—It is painless and avoids the ordeal of operation. This is an advantage not only of humane consideration, but of practical importance, because it enables one to treat early lesions in cases in which the patient will not at any time accept the gravity of the situation and submit to operation or any other method of gross destruction.

Second.—The method may be so used as to destroy carcinoma cells, but leave in large part the connective tissue stroma intact and in condition to repair itself.

Third.—Accordingly it leaves small scars.

Fourth.—It can be used in cases in which the surrounding healthy tissue cannot be sacrificed. This means that:

Fifth.—It is valuable in certain cases in which ordinary methods are objectionable, because they involve extensive operations and serious subsequent disfigurements, as, for example, about the eye and nose. This means further that:

Sixth.—It has a field of usefulness in some cases in which ordinary methods are impossible, because of the amount of destruction of tissues which complete removal would require; in other words, it may be used to produce a radical result in some inoperable cases and to improve and inhibit the course of other inoperable cases.

These theoretical advantages of the use of x-rays are a practically verbatim quotation of a statement of Pusey's published seven years ago, and his subsequent experience confirms him in the belief that their accuracy has been established by practical results.

THERAPEUTIC NOTES.

Hyoscine in Therapeutics.¹—According to Ringer, hyoscine is employed chiefly as a calmative or soporific, especially in maniacal cases. In other cases it should not be given till the more usual hypnotics have been tried, for its action is somewhat uncertain, and the susceptibility to the drug varies greatly in different people, and hence symptoms rather alarming in appearance, though not dangerous, may arise. It is the best remedy to calm the delirium of mental affections, and to induce sleep. It is useful in puerperal mania. From 1/150 to 1/100 of a grain, given by the mouth, is the dose that usually succeeds, but 1/80 to 1/50 may be required. It can be administered without difficulty, as it is tasteless. To quell mania it may be given hypodermically in 1/100 grain dose. It has been found useful in the sleeplessness arising from worry or excessive cerebral activity, or where the sleep is much harassed by dreams; it may succeed when other soporifics have failed and the sleep is refreshing. According to Mitchell Bruce, kidney disease does not contraindicate the use of hyoscine, and he states also that he has used the drug with benefit in exceedingly feeble states of the heart. It is highly recommended in paralysis agitans,

¹Wm. A. Pusey, M. D., *Jour. A. M. A.*, Nov. 5, 1910.

¹*The London Practitioner*, Nov., 1910.

as able to remove the tremor and the contracture: on discontinuing the medicine, however, these symptoms return. In this disease 1/250 grain is a sufficient dose.

Iodine in Surgery.¹—Wollheim concludes his valuable paper with the following from Kinnaman:

1. From 0.2% to 1.0% iodine is an antiseptic of marked potency.
2. It is far superior to bichloride of mercury. Two per cent. solution killed *Staphylococcus pyogenes* in two minutes.
3. (a) It is easily prepared and is stable.
(b) It is one-fourth as toxic as bichloride of mercury.
(c) It does not coagulate albumen.
(d) It is effective in very brief time.
(e) The stain soon disappears (easily removed by aqua ammonii).
(f) It is very penetrating.
4. One-half of one per cent. is strong enough for all purposes as an antiseptic.

Nicholas Senn was a strong advocate of iodine in surgery. In his valuable article his conclusions are:

1. Iodine is the safest and most potent of all known antiseptics.
2. Iodine in proper dilution to serve its purposes as an antiseptic does not damage the tissues; on the contrary, it acts the part of a useful tissue stimulant, producing an active phagocytosis—a process so desirable in the treatment of acute and chronic inflammatory affections.
3. In the treatment of simple hyperplastic goitre, actinomycosis and blastomycosis the local use of iodine is made more effective by cataphoresis.

SOCIETY PROCEEDINGS.

THE YORKVILLE MEDICAL SOCIETY.

The first meeting of the Yorkville Medical Society of the City of New York was held at the Aschenbroedel Club House, 146 East 86th St., in the City of New York on Thurs-

day evening, November 3rd, 1910, at 8.30 P. M. Dr. Eberhard W. Dittrich was elected President and Dr. Otto Glogau, Secretary.

The following interesting program was enjoyed by the large number of members present:

1. A Case of Infantile Dystrophy,
By Dr. Frederick Grosse.
2. Cardiac Displacement,
By Dr. Sigmund Breitenfeld.
3. A case of Ununited Fracture of the Tibia and Fibula, Operated Successfully,
By Dr. Jacob Heckman.
4. Labyrinthine Suppuration Cured by Operation,
By Dr. Otto Glogau.
5. Lupus Vulgaris,
By Dr. Eberhard W. Dittrich.
6. Paper of the Evening,
By Dr. Godfrey R. Pisek.

The above papers are to appear in forthcoming issues of AMERICAN MEDICINE.

THE EASTERN MEDICAL SOCIETY.

The regular monthly meeting of the Eastern Medical Society was held Friday evening, November 11, 1910, at the Cafe Boulevard. After the executive session with President A. J. Rongy in the chair, the following scientific program was rendered:

1. Presentation of cases
(a) Epilepsy caused by depressed fracture of skull; Operation; Recovery.
(b) Cases of disturbance of Internal secretions.

By Dr. Hyman Climenko.

2. Internal Secretions.

By Dr. Joseph Fraenkel.

¹J. L. Wollheim, M. D., *Am. Jour. of Surgery*, Nov., 1910.

American Medicine

H. EDWIN LEWIS, M. D., *Managing Editor.*

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The death rate from diphtheria has been steadily declining ever since the discovery of antitoxin. Probably no fact of modern medicine is more incontrovertible. France has led the way and with its mortality rate the lowest of all the civilized countries of the world, takes unquestionable leadership among progressive nations. Her success, however, serves to put all the other countries to shame. If France can achieve such a distinctive triumph over one of humanity's dread diseases, other countries can do likewise. If they fail, there is something wrong. In the United States, failure to equal or still further lower the record of France points to two causes, both reprehensible in the extreme.

The first is failure to accept antitoxin universally as an absolute specific for diphtheria. It is inconceivable how any intelligent person—a medical practitioner especially—can deny the specificity of diphtheritic antitoxin. One has only to compare the death rate without the use of antitoxin, with the death rate under its use, to receive uncontested evidence of the benefits that are certain from this absolute specific. To be sure, the tendency of the age is toward a declining death rate, irrespective of remedial measures. Any number of cities have reported during the past few years, lower death rates from all causes. Modern hygiene and sanitation are essentially accomplishing much in preventing mortality

and promoting longevity. But in connection with no other disease is there such notable and absolute evidence of specific control by a definite remedy, as in diphtheria and its control by antitoxin. Consequently denial or repudiation of the effect of antitoxin is not only irrational, it is all too often simply blind prejudice. For a medical man to assume an antagonistic attitude to antitoxin, comes perilously near to wilful negligence, and the time is close at hand when failure to use antitoxin will impose criminal as well as civil responsibility. This will remove not only the first cause of our present inability to equal or better the diphtheria death rate of France, but also the second and quite as important—the failure of the average American physician to use antitoxin properly. The French clinician employs antitoxin more promptly and heroically. He studies his patient, notes the particular virulence of each individual infection and adjusts the amount and method of use—frequency and so forth—accordingly. He has a wholesome fear of diphtheria, but not of antitoxin. He recognizes certain dangers—as part of all forms of internal medication—but knows that these are as nothing compared to the graver dangers of the disease itself. The antitoxin used by the French physician is no better or safer than that prepared in America; indeed there are not a few reasons for believing that our American antitoxin is more

potent, more uniform in unit strength and more free from by-effects such as rashes, etc. Therefore the American physician should entertain less apprehension in using antitoxin than his French confrere.

Unfortunately, this is not the case and many American physicians, while believing implicitly in antitoxin, fall short of securing the results they should by reason of their timidity in the use of proper dosage. The unwarranted antagonism to antitoxin that has had widespread publication in so-called health journals, and in the literature of the health charlatans, has not only created false fears in the minds of the laity, but what is more serious and regrettable has led innumerable physicians in spite of their scientific convictions to administer antitoxin with trepidation. In other words the bugbear of an occasional antitoxin eruption has obscured the infinitely graver dangers of diphtheria itself. It is high time that every intelligent medical man freed himself from the false fears created by those who, his judgment must tell him, are ignorant—or worse. One thing is certain, the American death rate from diphtheria will never be lowered to the point it should until American physicians use antitoxin as promptly and as freely as experience and the results justify.

An atrocious illustration of the false or ignorant teachings of those who have hampered the use of antitoxin is found in the following extract from the publication known as *Physical Culture*.

"Do not encourage the child to stay in bed. The idea that the child must remain in bed simply because there has been a diagnosis of diphtheria in its case is a terrible mistake. In previous articles I have called attention to the harm that is done

by impressing children with the seriousness of their complaint. It is far better to follow the opposite plan. No matter how serious the child's condition may be, he should be made to think lightly of it. The child should not be kept in bed with diphtheria unless there is a desire on its part to remain in bed. It should be encouraged to be up and around. And as for draughts, the patient should actually sleep in a draught, so far as possible. The oxygen of the outdoor air will very materially benefit this complaint. In fact, the outdoor treatment, in connection with the other treatments that are advocated here, would be of very great advantage.

Remember that drugs are of not the slightest use, and that antitoxin is dangerous, and is not in any case necessary; that diphtheria is not a dangerous disease unless it is made so by the method of treatment that is employed; that as a rule the severe symptoms of the complaint will disappear in a few days if you treat it in accordance with common-sense methods."

No one who knows a thing about the clinical course of diphtheria and the effect of the toxins on the heart muscle would ever advance such dangerous—yes, criminal advice. Every practitioner who has seen much diphtheria will recall many a fatal case traceable to unwise activity and failure to observe proper rest. Every word in the above extract is false, misleading and fraught with serious danger. The whole is contrary to every known fact concerning a frightful disease, and an insult to common intelligence.

The author responsible for such misinformation is Bernarr Macfadden, a man who only recently felt the strong arm of the government for some of his other animadversions. The pity is that the same government could not muzzle and prevent him from sowing such false and fearfully dangerous information among those who have no way of knowing how much harm is liable to result from such frightful perversion of the truth.

The wholesomeness of American meats ought to be beyond question but it seems that it isn't. Attacks upon their purity are to be expected from countries where the agrarian political interests are seeking to exclude all foreign food products so as to raise the price of the home grown, but we are astonished at their recent wholesale condemnation by an American author even though we know his associations were liable to make his emotions pervert his judgments. Nothing human is perfect and no one expects governmental inspections to discover every diseased animal, and more or less fraud is also to be expected, but the general opinion seems to regard the present system as so efficient that one can take a chance upon the health of animals whose flesh is admitted to the interstate and export trade. Indeed a perfectly healthy animal free of all parasites probably does not exist—the wild species are nests of parasites within and without. If anyone insists upon uninfected fish, he will never eat sea food of any kind. There is not the slightest danger of infection to the consumer in any case, for cooking sterilizes the meat, but there is more or less danger in handling the raw meat. The unwholesomeness consists in toxins which are not altered by heat, though some sanitarians deny this and have declared that there is no evidence that the cooked flesh of diseased animals is harmful. Nevertheless, the carcass of an infected animal decays very rapidly and causes ptomain poisoning, and no one wants to eat diseased meat anyhow.

Inspections are highly efficient in that they promptly detect the cases most liable to injure public health. They cannot be expected to find a single tuberculous focus,

and to denounce them as worthless for this reason is absurd. Still it is well that the agitation be renewed now and then, to prevent carelessness and check downright fraud. We are now looking after our own interests rather than the health of foreign consumers, because our population is becoming so numerous that it is soon destined to eat all our domestic products and an increasing amount from other countries. We should already insist upon proper inspection in South American slaughter houses, as the frozen carcasses received here may not show any faults. If we change from a meat and grain exporting country to an importing one, the shoe is on another foot and it should not pinch. We have always noticed how the British press, lay and medical, goes hysterical over every attack upon American meats, but says little or nothing of the awful conditions found in their own slaughter houses. But it is quite human to see the mote in the other man's eye and we may count upon some future shrieks from American farmers and packers as to the unwholesomeness of Argentina beef and mutton. So we had better prepare for it, by a system of foreign inspections.

Heat cramps are receiving a very desirable amount of attention from naval surgeons who see so many cases arise in the fire rooms and other hot parts of our war ships. There is still some difference of opinion as to the cause of these painful spasms, some inclining to the view that they are due to the poisons of defective or suspended urinary elimination—uraemia in fact—but the general trend seems to regard the condition as solely due to excessive withdrawals of fluid from the body by

perspiration. The latter view seems to be the better founded because of the miraculous and prompt cures by re-introducing fluid, through bowel, skin or veins. There are a few callings in civil life where the disease is encountered, such as iron workings, but in a minor degree there are many employments which must cause an unwholesome if not dangerous depletion of body fluids. It is therefore important to popularize the necessity for such people to drink plenty of water when perspiration is excessive—not gulping down huge amounts of ice cold water at one time, but frequent drafts of say a half glass of merely cooled water. The vital importance of the matter can be seen by the fact that in some cases little or no urine is secreted for many hours—a state of affairs which of itself must soon be fatal, not to mention the acute and chronic inflammations liable to arise from such a concentrated blood.

The cost of food for one person is said to be about twenty cents a day in New York City, counting merely the minimum amounts of protein and carbon compounds, and of course omitting the condiments and more expensive articles. At that rate an unskilled laborer making a dollar and a half a day, can support his wife and three children and have fifty cents left over for clothing and shelter. It seems to be a law, invariable the world over from time immemorial, that a workman by his daily wage can support three children. If he has more than three we are sure to find underfeeding, unless some of them work. As a matter of fact German statistics do show that the average number of children at home is about three, the others being out making their own living. In India, where the lowest classes earn about two cents a day,

there is much cheaper food but much more starvation as the families are larger, but the average Hindoo can support about three children for they need no clothes and little shelter. It is important that the practicing physician keep these facts in mind as they will frequently give him the explanation of many obscure conditions of malnutrition in the children of the huge families of the poorest classes.

Lunches for school children have now been tried sufficiently long to warrant the prediction that they have come to stay as a permanent feature of compulsory education. Medical examiners having found that serious undernutrition afflicted at least five per cent of the pupils, efforts were made both here and in Europe to supply the defect, and the results are now reported to be excellent even beyond expectations. The children pay for the food from one to five cents, but there is a slight deficit and as the labor of supervision is done by salaried public servants, the plan is really a big step towards state aid in rearing a family. The English government has provided by law that the authorities must feed a school child found suffering for food, and collect the cost from the parent later. Society is declining to permit the further production of defectives for public taxes to support, and the cost of food in New York City shows that we must take a similar stand, whether or not it spells the dreadful bugaboo "socialism." We won't let the children work until they are fourteen years old and even then under great restrictions, and as the father can't support more than three in school, we must do it for him if he has more than three. Look the facts squarely in the face—you philanthropists.

The exclusion of degenerate immigrants is receiving more attention because the foreign born citizens are furnishing an undue percentage of criminals, paupers, and the insane;—so it is charged in a general way, though it would be better to have exact figures. It is not fair to state only the total numbers, because foreigners must be expected to go wrong in about the same percentage as the natives. Moreover, it is now generally acknowledged that our immigrants are the least successful people of Europe and for that very reason they come here in the hope of bettering their lot while the best are too contented to leave. The lack of success of the emigrants is due to less intelligence or actual degeneration and therefore they should furnish far more than their share of breakdowns. Some find new conditions here for which they are eminently fitted and they become highly successful. Their former failure was merely due to lack of opportunity. Nevertheless it is suspected that entirely too many can find no sphere fit for them and that they merely swell the crowd of unemployed. Even if they get work it often forces out a still less efficient native. So it will be rather difficult for medical examiners to tell just what men to admit and what to exclude. No one can tell which are to become paupers, or insane. We can't do that with the native born. Present examinations exclude the manifestly unfit, not the future failures.

Restriction of immigration is being advocated more and more, but so far without suggesting any plan which appeals to legislators. There is a disposition to require each new arrival to possess a certain capital, so as to get the more successful, but

mere poverty is no guide as to what might be done in new conditions. Indeed some of our best citizens were penniless on arrival. Physicians cannot tell which are to become Guggenheimers and Pulitzers or do the grand work of Jacob Riis, nor can they pick out those sure to fail and become public charges. So there is more and more heard of the general proposition to restrict immigration, particularly from central and southern Europe and all of Asia and Africa, but to admit the better applicants from the northern countries. All such plans are bound to meet with violent opposition from those who think this land should be an asylum for every man no matter how stupid a failure he is. As it now seems proved that education does not put brains in their skulls, there is a growing opinion that though these low types must be permitted to become citizens, they must not be given the franchise until they have proved by knowledge of the language and laws, as well as by good works, that they are fit to use it. Something must be done to limit the electorate to those who are able to use it and also eliminate the hordes who now vote like sheep and lower the standards of civic virtue. Could not physicians, skilled in psychology, suggest some plan? Perhaps we might take a hint from Japan, where very few citizens have the franchise.

The qualifications of voters have undergone a great change since the time when only soldiers voted. That was the age of constant war, when those who defended the nation were the only ones who had any voice in its management. Every farmer was a soldier and nearly every citizen was a farmer. The best fighters among them became the rulers. Nowadays the fighters

and defenders and policemen and sheriffs are the paid brawny servants of the state whose rulers are selected for their brains irrespective of their brawn. It is even considered proper to allow women to vote, though they would be of little use in defense if the country is invaded, and they would have to be protected by men who are their intellectual inferiors. That is, it is being recognized that intelligence is the real test for the franchise, but what kind of intelligence and how much of it? Here we get into a maze of contradictions, for there are malefactors of great wealth. No one doubts that a highly intelligent woman is far safer with the ballot than a man who has no thoughts higher than a pick and shovel. Doubtless there is bound to be a vast change in the limitation of both the franchise and immigration, but they are problems of such intricacy that an early solution is out of the question. What is needed now, is more discussion by physicians. Let us remember that if a great nation declares war against us, there will be fifty thousand southern negro soldiers who may demand the franchise as they are the defenders, but as they can not use their muscles to any advantage in war unless guided by the brains of white men, it can be replied that the brains are the real defenders after all, and that both the brains and the muscles are hired by the state. This is lowering patriotism perhaps, but are the Jap soldiers less patriotic by reason of exclusion from the franchise? Fighting for the country may be one's tax for permission to live here.

The children who quit school have been investigated by the Russell Sage Foundation, which commissioned Dr. Luther

H. Gulick to collect the facts. He has published in *The World's Work*, Aug. 1910, a preliminary report which contains matters of so much more than usual medical value, that we must be pardoned for constantly referring to them. He has found that in this country every year an army of a quarter million boys and girls leave school at about the age of fourteen and a half. In sixteen percent the cause is ill health which is remediable in over half the cases and we might almost affirm preventable in all. Another element fail to keep pace because of irregular attendance and become discouraged, but he apparently thinks that most of them quit because too much is crowded into the eight years and much of it is beyond the mental calibre of children of that age—both of which are serious reflections upon our educational methods. We are sorry he did not discuss the nervous phenomena of puberty for it seems almost self-evident that the tremendous changes and restlessness at that period together with the mental apathy known to occur at periods of rapid growth or development, are largely responsible. The child does not know what is occurring and blames the school. If the period can be tided over by rest or easier work, the boy might be saved for an intellectual life instead of the mechanical one it seeks as an outlet for its restlessness.

The proper age to begin real school is generally assumed by physicians to be about nine, all prior efforts being merely day-nursing, but Gulick finds that those who begin so late furnish an undue percentage who quit because they fail to make up lost time and he strongly advises beginning the course at six or seven. There is ground for suspecting that he has mis-

interpreted the facts and that upon further investigation he will find that most of these children are kept out of school by reason of illness or delayed growth and mental or physical defects, and that they belong in the sixteen percent. A normal child given a chance, does seem to do better if it begins later, yet it may happen that it does not strike its gait until after puberty. Gulick also criticizes the method of stimulating those who can not keep up with the average, but not permitting more rapid progress of those who go faster than the mass. This is a desirable criticism which may lead to realization of the real truth that no two are exactly alike and no two require exactly the same course, each being in a class by itself. Of course this is utterly impractical in public schools where economy compels grouping, but we must remember that before the days of public schools or any schools at all, each child had its private tutor who was father or mother, and that we must strive towards this ideal individualism even if it is unattainable. The race has evolved and survived by individual instruction but now that the home instructors no longer do the work, we may be on unnatural lines.

The purpose of public education is the improvement of citizenship, while private education later is to train the child to make its living. The school course extends into the latter period and has given rise to the demand that the schools shall include something of the old fashioned apprenticeship. Right here is where we may slip up in our explanations of Gulick's statistics, for not enough is said about the absolute necessity for these children beginning very early to earn something. The father can not support them and they must leave

school, willy-nilly. With regard then to training in citizenship, he correctly states that our "whole theory of democracy is built on the assumption that the voters shall be intelligent." It is not true of course that by any treatment under the sun we can put intelligence into a skull where nature has not done it, but it is a pretty idea fostered by all pedagogs that knowledge is the same as intelligence. So they go on, year after year, pouring facts into the little minds and expecting the skulls to balloon out. The teacher's duty is to make the best of what materials come for training. Each child must be drilled to do its best, but what must be realized sooner or later is that the best is often of so low an order as to indicate a degree of intelligence too small for our form of democracy. Gulick is mixing up citizenship and the franchise. These quarter million little citizens must be made as efficient as possible, but it is now in order for the Sage Foundation to study up the question as to whether their failure to receive the mental training in duties of voters—training only given to those who stay in school,—does not indicate congenital unfitness to vote on questions requiring enough intelligence to appreciate such knowledge? There are many who think that the schools have undertaken the impossible task of putting brains in the bodies flocking to our shores from lands where they have always been mere bodies taken care of by the types born with brains. Do not these school statistics rather hint that we are drifting to a similar kind of democracy of intelligence as in Japan where the vast majority of male citizens do not vote though they are fanatically patriotic? That is, do not many of these quarter million fail because mentally unfit to accept the training for the franchise?

The alleged causes of arterio-sclerosis are so numerous that there is a widespread desire to find a single primary cause which may account for all cases. It is no longer considered a normal senile change which sometimes comes on prematurely and the belief that alcohol was responsible has disappeared as so many non-alcoholic cases have been found and also because heavy drinkers do not produce an undue percentage of cases. Indeed the experimentally proved effect of alcohol is a reduction of tension. It may kill us in other ways but we must give the devil his due, as saving us from this form of death of the abstainers. Syphilis and the metals, particularly lead, are now known to cause a different form of arteritis, and any excesses such as venery and the misuse of tobacco are discredited. There is a general opinion of course that hypertension is the ultimate cause and that vessels of poor material thicken soonest so that the disease may appear in those of faulty physique whereas the normal would escape from equally strong factors. If this is so, anything which will cause hypertension can be considered a cause of arterio-sclerosis, so that the primary causes must be legion. Sondern (*Arch. of Diagnosis*, April, 1910) now finds that there is considerable evidence that the starting point is a toxæmia due to faulty metabolism, chiefly of the nitrogen compounds—and of course this brings into the list of causes anything which disturbs nutrition, such as worry or overwork. There follows a contraction of arterioles with a necessity for greater pressure and heart action, with the classic train of subsequent organic changes in heart, kidney and elsewhere.

The prevention of arterio-sclerosis should be possible if the causes are so simple as modern investigators now seem to think, and that there would be an enormous saving of health and life, every practitioner knows. The importance of the matter is in the fact that the condition is so frequently found in our best and ablest workers who are doing so much for civilization and who can ill be spared,—men whom Sondern calls “the pillars of our nation, the overworked, self-sacrificing mental laborers.” Greater blood pressure seems to be nature’s way of feeding the tissues in spite of obstruction. Its artificial reduction would mean tissue starvation and other disasters, so the only thing to do is to remove the original cause which may be so trifling as to excite the derision of the patient. The lesson to be derived by laymen is the far reaching effect of bad habits which may not seem to have any effect at all. It is like the constant dripping of water on a hard stone. We must teach that the body is not to be abused in any way, for though it reacts to avoid immediate damage, it thereby develops organic conditions which are necessarily fatal. What a plea this is for the righteous, simple life. How it condemns the strenuous life for most of us, and too we must not forget that excessive muscular strain is not yet eliminated as the cause of many cases. A word to young athletes may save them from the after-effects so often found.

The press, the profession, and the public, is a theme suggested by the remarks of Dr. W. S. Newmayer at the recent annual convention at Baltimore of the American Association for the Study and Prevention of Infant Mortality. Dr. New-

mayer urged that every Department of Health should have its "Publicity Bureau" under the care of a competent newspaper editor, who should have at least a "working knowledge" of medicine. There can be no doubt that the time has come when there must be a closer approach between the medical profession and the public, unless the profession is willing to see its highest function, the guardianship of the public health, slip altogether from its grasp. It has repeatedly been suggested, in order to insure the presentation of proper medical news in a proper manner to the public as well as to maintain respect for the newspaper itself by preserving it from falling into wild and ridiculous statements, which would be ludicrous if they were not often so deplorable, that a physician should be retained on their staffs by newspapers, to edit all news items of a medical character. The plan has been tried in some cases, and possibly still obtains in a few, but in many instances, as we happen to know, it has had to be abandoned, because if the editor is lacking in a "working knowledge" of medicine, the physician is usually even more lacking in that "journalistic instinct" without which newspaper work is profitless. So far as metropolitan cities are concerned, a compromise might perhaps be effected by the co-operation of the editorial staffs of the big weekly medical journals—which are, or should be, class newspapers, rather than magazines—and the leading dailies. This would at any rate do for a beginning, and it would probably benefit the medical journals also; for in all journalism, however specialized and limited in aim and scope, editorial capacity is at least as important as technical qualifications, even if not more important. The

essential characteristic of the good editor is breadth of grasp, a capacity rapidly to get a bird's eye view of any subject so as to present it in due proportion and in harmonious relation with other subjects. On the other hand, the more specialized the technical mind, the more apt it is to concentrate on detail. The technical mind is trained to study a small field with microscopic scrutiny; the editorial mind to survey a large field with the naked eye and a panoramic sweep.

Socialism's demand for free medical care is a phenomenon bound to exert a profound change in the destiny of the medical profession and we might as well face the facts at once. The movement has attained tremendous proportions in northern Europe and already amounts to a bloodless revolution. When we see men of the highest intellectual attainments advocating measures in which society assumes responsibilities formerly belonging to the family, it means something. When we see governments slipping into the control of such men, it means accomplishment. As a matter of fact the demands of the socialists are really being acceded to piecemeal by the other political parties, and as quickly as they are found to be practicable. Public education is used as an illustration of the success attending the transfer of family duties to society, and the demand of poor mothers to be relieved several hours daily of the care of children too young for education is also in process of realization. The feeding of the children of parents too poor to buy proper food has also been taken up in earnest.

State insurance against disability from disease or accident is in successful opera-

tion, and so are old age pensions. In dozens of other matters the millions of socialists are forcing governments to lessen the severity of the individual's struggle for existence by placing the burdens on the shoulders of all. The extension of free hospitals, dispensaries and milk depots is apparently the first step in the socialist program for universal free medical service. We are not socialists in any sense of the word because the full realization of this revolution can come about only through a very slow evolution if ever, yet we are free to confess that the process is moving along at a rate which few Americans realize,—and it is the most natural thing in the world. .

Socialism in America is retarded by reason of the democratic individualism which has always characterized our institutions. Every man is free to do as he pleases, get what he can and the devil take the hindmost. Social efficiency is impossible as long as we permit the devil to take any, and as a matter of fact the whole course of evolution is in the direction of preventing any individual from sinking into a condition in which he is a permanent burden. It stands to reason that each man must do his share towards public efficiency and it is naturally the duty of society to make him an efficient worker as far as his abilities permit. Unfortunately we are so busy with our private affairs that no one will spend time or money on public ones which are left to the "bosses." We are therefore living in an oligarchy though we occasionally change the oligarchs. In Europe the spirit of democracy is here and there far more intense than in America, though the forms of government are intolerable to us. For these reasons the de-

mands of the people are being conceded in Europe in a way which astonishes Americans who will not tolerate a governmental paternalism. The socialist program will therefore make slower headway on this side of the Atlantic, and we need not anticipate the early adoption of a plan in which all physicians are public officials on salary—a possibility already discussed with great seriousness abroad. At present we demand that doctors shall donate their services to the poor—a most unjust state of affairs. Every minute we devote to these sufferers should be paid for from public funds, as we are enhancing public welfare. All hospital and dispensary physicians must be paid as a mere matter of equalizing public burdens. If this is socialism—then we are socialists to that extent. Society pays a lawyer to defend a poor criminal but tells the doctor to treat the sick poor without pay.

Large birth rates and socialism do not seem to have anything in common, yet it is beginning to be realized by publicists that there is a relation of cause and effect. Until quite recently the medical profession was solidly opposed to even discussing any means of lessening the enormous birth rates of the least efficient workers, and has insisted that pregnancy must not be prevented even if the parents are wholly unable to rear the children. When it was pointed out that a laborer earning two dollars a day could not feed six children, the clergy have answered that the Lord would provide. So far the Lord has not provided and there is a world wide movement to feed the little ones at public expense in school houses. In the meantime millions of industrial workers are joining the socialist ranks with the avowed purpose of

compelling society to give them employment. When it is pointed out that the capitalist class retains its supremacy by checking reproduction so that their wealth will remain in fewer hands, and that if the workers would only do the same the work would also be in fewer hands with little or no unemployment, the socialists have bluntly answered "Malthus be damned, we will have as many children as we please and you have got to take care of them."

A large family is the basic cause of poverty, as our charity organization knows only too well, and the whole question is being boiled down to the one point as to whether society shall rear the children of a parent unable to feed them. There are thousands of other causes of poverty, but it is now proper for the medical profession to think over this one, in which it is vitally interested. We do not presume to assert what should be done, but merely call attention to a phenomenon which is giving great concern to philanthropists. Of course nothing can be done to prevent the conditions because the less intelligent people are, the more nearly do they approach the animals in unrestrained reproduction. Any checks would have to be applied by the intelligent types who would thus limit the number of stupid laborers according to the demand for them, thereby converting one class of men into high grade beasts of burden and this is unthinkable. As far as we know society must adjust itself to a state of affairs in which there is an unrestrained flood of babies of the stupid to be reared to swell the ranks of the unemployed and demand sustenance of the better endowed who seize the work because more efficient.

The demand for industrial education is heard more and more but it is amazing that the medical profession is not taking an active part in this great modern revolution now silently going on. We are the very ones who could guide and direct it to the betterment of civilization. Physicians have repeatedly called attention to the fact that children begin dropping out of school by the wholesale at 13 or 14 years of age because they have not the ability to comprehend philosophical, mathematical and scientific theories which make up the bulk of later education. It is not always poverty, for many could well be kept in school longer. Our educational system is based on the idea of mental training and originated at a time when industrialism was at a minimum. Since then, factories have really created millions of people incapable of high education who formerly were compelled to content themselves with servile positions or farm labor. The large birth rate makes it utterly impossible for the parents to support their children who cannot be put to wholesome work in agricultural communities as of old and the little ones by law are kept in schools which do not teach them how to make their living. The farm boy learned to be a farmer, but the modern boy cannot learn anything until he actually is put to work to support himself and he swells the ranks of unskilled labor to become a social burden sooner or later. Consequently labor unions, teachers and philanthropists are uniting in the new demand to turn the schools into a new kind of institution in which the scholars are taught something by which they can support themselves at the earliest possible moment—and also contribute to family support as the poor always have done. Almost every great man worked as

a boy to help his father, but the son of a factory employee can do nothing. No wonder poverty is accentuated in modern cities.

The new education will be of slow development because the practical difficulties in making the change are so enormous that they cannot be surmounted in a hurry. In the first place there are no trained teachers or at least so few that they scarcely count. The apparatus needed to replace useless books will cost more than taxation can stand. New buildings may be required resembling miniature factories. Perhaps it is a matter for private initiative. Railroads are training certain classes of employees for they found it impossible to get them from the schools. The government has to train its military servants. Why should not each great manufacturing concern create its own training school, where the boys and girls are mentally trained half the day, and industrially the other half? If the managers have forethought they will see that in such way they will make more money by having better laborers. Commercial houses long ago established schools for the children they were compelled to employ and the system has worked perfectly. This has already taken an enormous load from taxpayers, and an extension of the system will still further lighten it. Municipalities may then find it practicable to merely supplement or prepare for this new kind of apprenticeship. The beginning must be made at once for the urgency is great. Let physicians, who see the distress in the slums, report the facts, causes and remedies. It is our work, so let us be up and doing. If this too is socialism then we are socialists in the same light in which we believe in public education to make better citizens of our neglected babies. The only other alternative is the impossible one of forbidden reproduction in the case of families of small income.

The menace of the public drinking cup is becoming more generally recognized and Massachusetts is the latest state to establish legal restrictions against its use. Travelers as they pass into that commonwealth find that all public drinking utensils promptly disappear. The receptacles that held the water provided to slake the thirst of the travelling public still remain, and so the wayfarer is treated to the spectacle of "water, water everywhere, with not a drop to drink." Enterprise will soon correct this condition, and devise some plan whereby the needs of the people may be satisfied without danger of conveying infective material. Already in some localities individual drinking cups have made their appearance and though they have not come into common use as yet, they probably offer the ultimate solution of the problem.

At any rate, common sense and decency make the continued use of public drinking cups intolerable to those who realize any part of the presenting dangers. Without doubt there is no more potent factor in passing infection from person to person than the drinking cup used by Tom, Dick or Harry. Let this filthy custom be stopped—by education if possible, by law if necessary—and one more important step will have been taken in the prophylaxis of disease.

1910, Good Bye!—A few short days and old 1910 will pass on to join the ages. It has been a good year, as years come and go, and it is our earnest hope that 1911 may treat us as kindly. With courage for the coming days, trust and affection for our fellowmen, and an abiding faith in the power of earnest effort to carry us closer to our goal, let each and every one of us set out on the next lap of life's journey, more resolved than ever to get all the good and happiness possible from our work and play. With this sentiment, AMERICAN MEDICINE wishes its readers a Happy New Year.

MEN AND AFFAIRS.

Woman Suffrage.—For obvious reasons the real objection to woman suffrage is never discussed in either the daily papers or even those journals devoted almost exclusively to a promotion of the movement. What men really have to fear in conferring the right of suffrage upon women is the menstrual period. What is merely a trifling inconvenience in some women, particularly those who have to work and cannot afford to nurse themselves, becomes in the idle or semi-idle—the very women who are working strenuously for the right to vote—a profound *bouleversement* of the economy, often accompanied by severe pain, by hysteria, by whims and vagaries of the most extraordinary nature. A large percentage of women are positively not sane during the menstrual epoch and, if called upon to vote at this time, the most trifling considerations might influence their decision; the way the candidate parted his hair, for instance, or his taste in dress or jewelry. We should not be surprised, nevertheless, if the women suffragists finally achieved their object. If men were actuated politically by moral or sentimental considerations, they would not hesitate to grant at once what women expect to achieve only through the suffrage, viz., the abolition of child labor, the shortening of hours during which women may be employed, the enforcement of all regulations designed to permit them to rest when not actually engaged in selling, and, perhaps, the conferring of a monthly holiday of three or four days, the time to be chosen at will by each individual woman.

Another Notable Woman Gone.—Mrs. Eddy has followed the late Lydia Pinkham into the great beyond, Christian Science

having no more power to confer immortality than the celebrated concoction of roots, barks, herbs, and medicinal plants. It is fair to credit Mrs. Eddy's followers with as much vitality as those of Mrs. Pinkham and the present generation of believers is likely to die in the faith, since the vegetable compound has survived its inventor for over twenty years. With the disappearance of the leader, however, which really seems to have been a shock and a surprise even to those Scientists who were supposed to be absolutely sophisticated, the cohesive power of the organization is bound to loosen. A tangible idol of some kind is an absolute necessity for the persistence of any cult and, unless a miracle-working statue of the late Mrs. Eddy is erected within the present decade, or possibly during the next, Christian Science will follow Perkins and his tractors, the Fox sisters and their "spirits," and the prototype himself of Mrs. Eddy, Quimby and his magnetic methods.

A Patent Medicine that Antedates Christianity.—Of all historical fakes, the most triumphant was undoubtedly *Orvietan*. This word, although mentioned in Scott's *Kenilworth*, does not appear in many dictionaries, even medical. The remedy has been forgotten, so to speak, under the name of Venice Treacle. From the time of Nero till late in the eighteenth century, *orvietan* was the great panacea, curing everything and being the sovereign antidote to all poisons including snake venom. Prominent among its sixty odd ingredients was the powdered flesh of vipers. Known for centuries under the names of *theriaca* or *mithradate*, one Lupi, a Tuscan, managed to secure a practical monopoly for his formula, which he named after his native town, *Orvieto*. Several of his follow-

ers managed to secure about 1628 the sole right to sell orvietan throughout the Papal States and a violation of this priceless monopoly was punished not only by a fine of one thousand ducats, but by excommunication!

A cart-tail physician, Desiderio Descombes, despite the papal protection of Lupi, managed to build up an enormous patronage for his brand of orvietan. It is to Descombes that we owe the word charlatan. This word is usually derived from the Italian *ciarlare*, to chatter, but it seems unlikely that Descombes would care to boast of his oratorical prowess, although it was the sole secret of his prestige. It has been surmised that he derived his pet title from *scarlatto*, in reference to the brilliant coat he wore when mounted upon his little stage on the Pont Neuf at Paris. Something really striking in vesture was a necessity, for the Pont Neuf was crowded from end to end with quacks and mountebanks of every description. It is consoling to learn that although Descombes obtained royal approbation and a fee from the queen of one hundred and fifty crowns, he was unable to cajole the Paris faculty of medicine into an endorsement of his methods. The royal approval, however, sufficed to win him a fortune. He finally died of the plague, despite his possession of what should have been a sufficient quantity of orvietan to safeguard him from all possible contagion.

Orvietan finally lost its vogue about 1750, although it is said to be still used in Normandy by a low class of veterinary practitioners. The famous quack remedy is older than Christianity, for it was known long before Galen, who published a formula of his own, containing sixty-four in-

gredients. The last trace of it existed in the United States under the name of *Confectio Damocratis*, which old practitioners will recall as an important ingredient of the original Warburg's Tincture. The Confectio was made of turpentine, acacia, treacle, balm of Gilead, Russian castor, cinnamon, myrrh, and some sixty other ingredients, making a mixture very like orvietan, except that the flesh of vipers was replaced by the dried bellies of skunks, a doubtful improvement from the viewpoint of either therapeutics or aesthetics.

A New Yorker of English origin has recently distinguished himself by a threat to shoot any physician who ventures to carry out the law and vaccinate his children preparatory to their entering one of the public schools. We are reminded that the *bona fides* of anti-vaccinationists is not always absolute. In the terrible epidemic of smallpox in Montreal in 1885, which was due in great part to the objection of a large illiterate population to submit to vaccination from motives mainly superstitious, a certain English speaking physician distinguished himself by his loud championship of the antis. The time came when it became necessary for this gentleman to make a business trip out of town. Like other travellers on the train he was requested to bare his arm, and, if unable to exhibit a "good mark," to submit to the lancet. Despite his protests and loud announcement of his name and carefully acquired reputation, the inspectors were firm, and up went the doctor's sleeve. What was the mingled feeling of amusement and disgust of the passengers to see upon the arm of this champion of liberty a superb vaccination mark certainly not over six weeks old!

Adulterated Drugs.— It may not be worse to adulterate drugs than articles of food; one practice runs the other close as a despicable and homicidal performance. One of the oldest and hitherto most respected wholesale drug firms was recently arraigned and fined for adulterating common prescription drugs. Whom are we to trust? There are disquieting rumors among physicians who have laid in large stocks of beautifully colored and attractive looking pills and tablets, sold to them by travelling agents, that the therapeutic activity of these articles is not equal to their beauty. It is a very serious question whether much of the so-called therapeutic nihilism of the day is not due to failure to notice results of any kind after the careful exhibition of one supposedly pure drug after another. When, as in one instance that came to our notice, the greed of the manufacturer is so great as to cause him to put out an alleged cathartic pill that is absolutely inert, discovery cannot be long delayed. If skillful adulteration is a matter of pride with any manufacturer, he should confine his dexterous manipulations to the falsification of excipients only.

Our extinguished colleague, Dr. Cook, is explaining in flowery language why he thought he reached the North Pole. The publication of his story is justifiable, perhaps, by *Hampton's Magazine*, for we cannot doubt that believers in the polarized physician still exist in large numbers, and the publishers may be among them. No one who examines Cook's record, however, will believe that he believes. His performance at the defunct Huber's dime museum was enough to mark him forever as the cheapest kind of a "ballyhoo" faker, to say

nothing of his imaginary trip to the top of Mt. McKinley. Will he narrate that he was still in a trance when he visited the King of Denmark and went through at the Danish court his disgraceful and unforgivable performances? Is he going to utilize the fees paid him by *Hampton's* to reimburse the deluded purchasers of tickets to his humbugging lectures?

A well known homoeopathic quack was fined recently for misbranding. Many of his "cures" were found to be only small granules of cane sugar. Hanging would be sufficient for faking of this kind, whereas torture would not be too much for manufacturers of patent medicines who introduce morphine, heroine, or cocaine into their preparations and thereby make hopeless and lifelong slaves of their patrons.

Who Pays the Freight?—During the past few months a good many thousands of dollars have been spent in promoting through newspaper advertisements and circulars galore the rather illy defined objects of a so-called "League for Medical Freedom." Offices were opened in New York, office help was engaged and several individuals devoted more or less of their time to the erstwhile affairs of the organization, presumably for more tangible recompense than that which they could derive from the self approbation accruing from their association with and promotion of a cause so great and holy. Expense, real expense met only by legal tender has been entailed, and increasing wonderment is bound to arise, as to "who pays the freight?" Crude and coarse as this expression certainly is, it conveys a clear cut thought. Some one is paying for the

onslaughts on the American Medical Association, the proposed bill for a national department of health, and the whole regular profession. Few physicians of standing of any school are identified with the movement and it is entirely probable that those who are, have been attracted by a part and not, by any means, with all of the avowed objects of the movement. Unless we are greatly mistaken, a great many of the good people who have been attracted to the organization by misrepresentation or mistaken ideas as to its real aims are shortly due for a rude awakening. And then as always happens, they will wonder and wonder how they ever could have wandered so far from the paths of common wisdom and plain, every day horse sense. Gracious, if some folks would only tell what they know, about the opposition to the movement for a national department of health, what a scurrying there would be in certain quarters. But to quote an almost forgotten friend, the late Chimmie Fadden, "Wats de use?"

The physical breakdown of athletic naval officers is causing a lot of comment among laymen, though similar facts have been mentioned time and time again in the medical press in the frequent warnings against excessive strains in youth. The army, too, is now and then astonished to learn of the death or disablement of middle aged or even young officers, who had made athletic records and who were presumed to be destined for a long career of more than ordinary activity. It is all due to the fact that contests requiring very great or prolonged exertion generally strain the tissues beyond the limit of elasticity. Occasionally death is prompt from acute dilatation of the heart, as in the ancient winner of the Marathon, but the cases of later disease are generally based on a hypertrophied, or weakened or chronically dilated heart. It

is now reported that athletic naval cadets are to be restrained from taking part in such contests and we do hope that all other institutions of learning will follow this wise example. We have repeatedly mentioned the nervous exhaustion of training and believe that the trouble is being eliminated by the vigilance of the faculties who are promptly forbidding students to take part in athletics as soon as scholarship shows deterioration due to nervous fatigue. So let the good work go on to the end that all excesses be eliminated from the vitally necessary sports of youth.

Acute heart strain is becoming of more and more practical medical importance on account of the increasing liability to it in our over-strenuous athletics. There is no doubt whatever that the natural "play" of children and "sports" of boys are essential for proper development, and that the school routine which prevents muscular activity for hours at a time is not only dangerously weakening the heart muscle for normal play, but rendering it absolutely unfit for the frightful pressures to which it is subjected in the modern contests. The preachment of the medical profession has always been against excesses of all kinds, and even though we be accused of harping upon it, we must again utter a note of warning against all sports which subject the heart cavities to a "stretching" or dilating blood pressure. We do this because we are constantly encountering cases of heart derangement dating back to an extraordinary and useless strain of people who have had a more or less sedentary existence. That is, we again implore those in authority to so arrange the work of the young, that plenty of natural or moderate exercise is possible to make the heart grow to its right size for the work of life, and at the same time to prohibit utterly all sports in which there are excessive prolonged strains which no boy naturally indulges in.

ORIGINAL ARTICLES.

PYELITIS IN PREGNANCY, ITS ETIOLOGY AND CYSTOSCOPIC DIAGNOSIS.¹

BY

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Amongst the various forms of infection in pregnancy, pyelitis and pyonephrosis of the kidney have only recently been given the study they deserve. The importance of a true knowledge of the frequency, causes and course of these conditions is of great importance in the care of pregnant women.

Pyelitis in pregnancy is often insidious and severe; its diagnosis is always difficult and frequently inexact. The differential diagnosis must be made between such serious conditions as appendicitis, cholecystitis, puerperal infection, and so forth, and a decision as to the question of surgical treatment must be based upon accurate findings; otherwise, a patient may be operated upon under mistaken judgment.

For these reasons, it is important that diagnosis of the kidney lesion should be accurate, and this can only be by collection of the kidney urine by ureteral catheterization through the cystoscope. Hence it is also necessary to take into consideration the forms and causes of kidney infection in pregnancy, in order that treatment be intelligent and prognosis faithful.

Etiology:—A consideration of the etiology of the condition involves itself in a study of (1) the kidney in pregnancy, (2) the bladder in pregnancy, and (3) the infecting organisms.

Kidney in Pregnancy:—The kidney in pregnancy usually suffers severe strain from the work of secreting the excess of

waste as a result of pregnancy itself. The frequency with which degenerative changes in the renal epithelia and parenchyma accompany the processes of pregnancy, is well known as is shown by the name, "kidney of pregnancy" of V. Leyden, describing a form of fatty degeneration of the kidney which may be marked in degree, and which may be, to some extent, a more or less frequent occurrence in pregnancy. This may cause the organ to become a weak link in the chain of excretion of body waste, and this irritation of the kidney may predispose it to infection of the kidney pelvis by enfeebling resistance and lowering tone.

In addition, there is frequently dilatation of the pelvis of the kidney with obstruction of the ureter at the pelvic brim. This may cause obstruction of the flow of urine in the kidney pelvis, and predispose to infection. This condition of hydronephrosis in pregnancy, is shown by the reports of many investigators who found that dilatation of the pelvis of the kidney was quite commonly found at autopsy, and that the right kidney was most commonly dilated, while both were sometimes dilated together, and the left but rarely alone affected. Olshausen (1) found that in 16 cases of dilatation of the kidney pelvis in autopsies upon the pregnant, that 12 were unilateral, and of these, 10 were right-sided. Pollack (2) in 130 autopsies on the pregnant, found dilatation of the ureter in 35 cases. Of these 18 were bilateral and, in 17, the right ureter alone was dilated. Of 4 dilatations of the kidney pelvis and ureter in autopsies upon the pregnant, observed by the writer, 3 were right-sided and 1 bilateral. As these cases of bilateral dilatation of the ureter were all found at autopsy, it is quite probable that in the beginning the right side alone was affected and that, with the continuance of

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the obstructive cause, obstruction of the left ureter also occurred.

The cause of this pressure and obstruction of the ureter is not definitely known. By some it is thought to be caused by direct pressure of the fetal head against the pelvic brim, but the occurrence of the condition in the earlier months of pregnancy, is against this view. Cathala (3) claims that the compression of the ureter is brought about by the traction of the lower uterine segment as it rises on the pelvis. Sippel (4) and others say that it is due to the compression of the ureter by the gravid uterus.

It is probable that, in addition to these factors of direct compression or distortion of the ureter causing obstruction, that there is within the ureter itself changes in the mucous membrane, as will be described later as observed in the pregnant bladder through the cystoscope. The ureteral mucous membrane probably shares in the hyperaemia and thickening which occur in the pregnant bladder, and so there is caused some slight obstruction to the urinary outflow. This enlargement and hyperaemia of the lower portion of the ureter, is shown by the ease with which it can be palpated through the vagina in pregnancy.

But be the cause what it may, it is a fact that urinary obstruction, with dilated ureter and hydronephrosis does occur in pregnancy, and that in a certain class of cases of pyelitis in pregnancy, this condition is found. This ureteral dilatation does not occur in all cases of pyelitis in pregnancy, but only in a certain percentage. The causation of all cases of pyelitis cannot be put to urinary obstruction, plus infection, for in a considerable percentage of cases no urinary obstruction can be proven.

It is evident, therefore, that there must be other and additional factors which cause

the pelvis of the kidney to become a *locus minoris resistentiae*, and a suitable spot for infection. It is believed that these are the lessened resistance of the kidney from the effect of the toxins of pregnancy and the irritation and traumatism to the kidney and ureters caused by the presence of the fetal tumor.

Bladder Changes in Pregnancy:— The condition of the bladder itself in pyelitis in pregnancy is of interest, not only from the point of view of its effect upon the causation of the condition, but also in regard to the differential diagnosis of pyelitis from cystitis in pregnancy. The observations here noted are based upon cystoscopic examination of the bladder of 32 cases of pregnancy. Most of the cases were examined a number of times, and several cases were followed throughout pregnancy. One case, (No. 3) was examined cystoscopically every week throughout two pregnancies, in the first of which she suffered from pyelitis as diagnosed by ureteral catheterization.

The first effect of pregnancy upon the bladder is to cause a congestion of the trigone. This is due to the general hyperaemia of the pelvic state in which the whole pelvis shares. This hyperaemia begins near the orifice and spreads up the arborescent vessels of the trigone. If there has been no previous trigonitis or cystitis, the hyperaemia, as a rule, causes no symptoms. But, if there has been a previous trigonitis, it is a common event to have a recrudescence of this inflammation producing symptoms of frequency of urination and pain, as was shown in a previous paper of mine, (5) where ten such cases of recrudescence were reported, and it was noted that the tendency was to the recurrence of previous trigonitis after pregnancy occurs. This hyperaemia is more marked in pregnancy with a retro-

verted uterus, because, in such conditions of retroversion, there is a greater amount of congestion in the early part of pregnancy than in pregnancy with anteversion. This is believed to be due, as was noted in a previous paper (6), to the additional congestion caused by the retroversion.

With the advance of pregnancy, the congestion of the bladder mucous membrane becomes more general and uniform. The mucous membrane loses its usual pink-white appearance and becomes a cream-yellow, and also gains the appearance of greater thickness. The bladder lining appears more velvety and softer. There is apparently, an oedema and a greater increase in the lymphatic tissue of the bladder. After the congestion of the first weeks has been replaced by the thickened creamy appearance, the blood vessels of the bladder fundus are not readily seen. There is evidently a hypertrophy of both the muscular and membranous portion of the bladder wall, and the lower end of the ureter is enlarged and more easily palpated.

These facts observed cystoscopically, are borne out by the autopsies of three cases of pregnancy in which I have had the opportunity to examine the bladder wall histologically.

There was in these cases, an apparent hypertrophy of the muscle fibres and a small round-celled infiltration of the bladder wall. There were plasma cells and an apparent active proliferation of the epithelial layer. It is well known that vast numbers of epithelial cells are cast off from the bladder during pregnancy, and this proliferation is their renewal.

Mirabeau (7) has also noted cystoscopically, the curious changes in the bladder wall of the pregnant. He claims that obstruction to the urinary current is brought about

by the hypertrophy of the walls of the ureteral orifice.

While it is no doubt true that there is oedema of the bladder wall and enlargement of the lower portion of the ureter, there was never noted in my experience any obstruction at the ureteral orifice itself. The ureteral orifices are much more often rigidly patent and patulous, the so-called "golf-hole" orifice.

This condition is believed by the author to be due to the stretching of the intra-ureteral bladder ligament by the growing cervix of the pregnant uterus. The enlarged cervix presses upon the bladder to which it is intimately related, and causes alteration in the structure of the ureteral orifice by the pull which is caused. The orifice from being an elevated papilla becomes stretched, flattened and elongated. The base of the orifice may often be seen through the patent opening. The condition described was traced in one case of cystitis, who became pregnant while under cystoscopic observation. The elevated nipple-like ureteral orifice on the right side became flattened and patulous as pregnancy advanced.

This condition injures the valve-like action of the ureteral orifice, and allows of regurgitation of urine, with the possibility of kidney infection. If there has been a previous trigonitis this patency of the ureteral orifices is usually more marked, and is believed to be due to the loss of elasticity

The study of the female bladder in pregnancy is of great interest, and I should be grateful to those doing autopsies on the pregnant or puerperal, if they would send me pieces of the bladder, trigone, fundus and ureteral orifices for microscopic study. The specimens should be placed in Muller's fluid or formalin 10%. The cause of death and duration of pregnancy would be of use. I should be glad to send mailing bottles to any who will put me under a debt of gratitude by sending specimens to Dr. Ellice McDonald, 174 W. 58th St., New York.

of the trigone from the preceding inflammation. A similar condition of patency of the ureters is sometimes noted in the hypertrophic endocervicitis with an enlarged cervix and trigonal inflammation.

The possibility of regurgitation of urine when the valve-like action of the ureter is lost, has been proven in animals by Donati (8), Baumgarten (9), Levein (10), Goldsmith (11), Sampson (12), Garceau (13), and others.

These changes in the bladder caused by pregnancy, are of importance in the consideration of the etiology and diagnosis of pyelitis in pregnancy.

The frequency with which patency of ureteral orifices is found, makes it probable that infection may or does result from regurgitation up the ureter into the kidney pelvis. Infection is often present in the bladder, as is proved by Albeck's study, which showed that pus was discovered in the urine of 5.88 per cent., 7648 puerperae and in 14.3 per cent. of the primiparae. In a bacteriological study of 96 puerperae with pyuria, colon bacillus was found 76 times, staphylococcus 4, and a streptococcus 9 times.

Thus, we have the factors in the causation of pyelitis in pregnancy—a weakened kidney with lessened resistance, and possible dilatation of the ureter and hydronephrosis, the frequent presence of infected bladder urine and the opportunity for its regurgitation up the ureter.

The various modes of infection in pyelitis in pregnancy are usually spoken of as, ascending, descending, blood-borne and lymphatic. The lymphatic course has been eliminated as a possibility, and the possibility of blood-borne infection in pyelitis in pregnancy, is probably not great. It no doubt does occur in pyaemia, with infected

embolic and in some cases of staphylococcic and streptococcic infection of the kidney, but the ascending form is the common or usual mode of infection.

An evidence of the slight possibility of blood-borne infection in pyelitis in pregnancy, is the fact that the great majority of such cases are of colon infection. The colon bacillus occurs seldom in the blood, so seldom that cases are reported as of great rarity. At the same time, colon is the most frequent form of bladder infecting organism. Also streptococcus infection of the kidney pelvis is rare, while it is the most common blood-borne organism in pregnancy; staphylococcus infection of the kidney is also rare, although more common than streptococcus. Yet staphylococcus infection of the kidney may result without abscesses elsewhere, (Case 1) which renders it unlikely that it was blood-borne or hematogenous infection. The gonococcus is also found as an infecting organism and it is but seldom blood-borne.

The facts render it probable, although impossible of proof, that the great majority of kidney infections in pregnancy occur through a scent of infection from the bladder through the ureter.

The infection of the pelvis of the kidney or ureter is the first step in disease which may continue to become a pyonephrosis or pus kidney with focal abscess, as is reported in cases 1 and 2.

Diagnosis:—The diagnosis of pyelitis in pregnancy depends first, upon the recognition of the signs and symptoms of an infection as shown by the fever, increase in pulse rate, headache, backache, flush and general malaise. Second, upon the evidence of urinary infection, as shown by the presence of pus in the urine and localization of the kidney as the site of the origin of the pus by means of ureteral catheterization.

The condition is not usually marked by sudden onset or rapid course in the beginning. The first symptoms may only be general depression.

There is usually dull pain upon the right side and back, under the ribs in the kidney region. This pain is often of the renal colic type, and may radiate down the ureter toward the pelvis. This type of pain is fairly constantly found. The kidney is sometimes enlarged and not infrequently tender, although the presence of the pain is more constant than either enlargement or tenderness.

There is frequently a tender spot in the abdomen upon the right side and about two fingers' breadth above the ramus of the pubic bone. This corresponds to the point of crossing of the ureter over the pelvic brim, and its proximity to McBurney's point makes the mistaken diagnosis of appendicitis possible.

Pain in the bladder is usually present, and may be from previous cystitis or be the result of cystalgia from reflex irritation. It is much more frequently, however, caused by cystitis. There is usually frequency of urination or irritation from the cystitis, and this is worse at night, being of the type called "nocturnal pollakuria."

One patient of mine showed a kidney-bladder reflex of pain in the kidney on making efforts to urinate.

Fever is almost constantly present, being of the remittent type, high in the evening and down in the morning. The fever is usually 101 deg. and the amount of its rise is a fair indicator of the amount of toxæmia from infection. Chills are quite commonly present. Vomiting is not infrequent, and there may be associated with the infection considerable toxæmia of pregnancy, as was noted in Case I.

The pain is usually referred to the right side in the beginning, and in my two cases of bilateral pyelitis, the pain was always referred to the right side alone.

The diagnosis must depend after all upon examination of the urine, as does the diagnosis of pyelitis in the non-pregnant. The presence of pus in the urine, with fever, is sufficient to warrant a suspicion of pyelitis. The amount of pus varies greatly, and depends in a great measure as to whether there is a coincident cystitis.

Cystitis of Pregnancy:—Cystitis in pregnancy on account of the changes in the bladder wall, above described, is often of a character peculiar to itself and worthy of the name "cystitis of pregnancy." The softening and thickening of the bladder wall cause the inflammation to be more widely distributed and penetrating to the bladder tissues than commonly. Greater quantities of pus and epithelial cells are, as a rule, excreted than in cystitis and in the non-pregnant. The bladder is very much inflamed, with marked oedema and hyperæmia. There is considerable desquamation and exfoliation of the epithelium and pus. The exfoliated shreds and cells cling to the bladder wall like small tags. The mucosa is markedly softened, swollen and boggy. The picture is that of a generally acute cystitis, with congestion and much oedema. It is sometimes associated with fever, as in cases Nos. 5 and 6 of cystitis simulating pyelitis in pregnancy.

The occurrence of this form of cystitis with its large amount of pus and the possibility of referred pain and fever, makes it of importance that the diagnosis of pyelitis should be made by cystoscopic examination of the bladder and direct examination of the kidney urine, obtained by ureteral catheterization.

The necessity of this course is obvious. It is the only way to decide the locality and

origin of pus in the urine. If, in purulent kidney disease in the non-pregnant, it is necessary to catheterize the ureters in order to make an exact diagnosis of the condition, how much more so must it be required in purulent kidney disease of the pregnant, where the diagnosis is complicated by the presence of the fetal tumor, and the possibility of the various forms of infection of pregnancy.

In the three cases, Nos. 5, 6 and 7, simulating pyelitis, here reported, the diagnosis, if uncorrected by ureteral catheterization, would have been that of pyelitis in pregnancy. In one case operation was considered, and, if ureteral catheterization and cystoscopic examination had not eliminated pyelitis, an exploratory kidney operation would have been done. The two cases of cystitis of pregnancy simulating pyelitis, had the evidences of an infection of the urinary tract, as shown by the fever, pain, and pus in the urine, and in one case there was marked right-sided pain. These cases cleared up promptly upon bladder treatment and the therapeutic test bore out the diagnosis.

Cystoscopic examination and ureteral catheterization is necessary not only for diagnosis of pyelitis, but, as a means of prognosis it is invaluable. If operation upon an infected kidney is considered, it should be known that one kidney alone is involved, and that the disease is not bilateral. There is no means of doing this in this affection except by collection of the kidney urine by ureteral catheterization or other methods.

Catheterization of the ureter and cystoscopic examination are not difficult procedures, even in pregnancy, and cause but little discomfort. They can be done without anaesthesia, and I have for three years done

them without cocaine or other local anaesthetic. The danger of the procedure is slight as regards possible infection of a healthy kidney, and only one case of premature labor as a result has been reported by Bath (13).

The catheterization of the ureter is facilitated by having the patient in the raised lithotomy position or lithotomy Trendelenberg position, so that the weight of the fetal tumor is removed from the bladder and allowed to rise in the abdomen.

It should also be remembered that the dilated bladder is usually distorted in pregnancy by a marked transverse dilatation and a hollow in the bladder fundus in which the uterus lies. This frequently alters the position of the ureteral orifices, so that the orifice must be pressed up toward the catheter by the fingers or a tampon in the vagina.

The examination of the resultant urine should be for specific gravity, pus cells, casts, urea, chlorides, etc., and it should, if possible be compared with the mixed bladder urine and the urine of the opposite kidney, obtained by ureteral catheter.

The ureteral orifice, as a rule, does not show the marked changes about its opening, as occurs in chronic pyelitis and tuberculosis of the kidney in the non-pregnant.

If there is marked cystitis, it is well to wash the bladder out with an antiseptic solution and catheterize the ureter through such a solution. I use for this purpose, quinine bisulphate, 1-1000.

The presence of pus cells in the kidney urine with the constitutional evidences of an infection in pregnancy, is taken as evidence of a diagnosis of pyelitis.

The examination of the mixed bladder urine can give no evidence of a pyelitis from examination of the various forms of its epithelia. There are so many epithelia cast

off from the bladder and "kidney of pregnancy" that it is useless to attempt to base a diagnosis of pyelitis upon the bladder specimen.

The diagnosis of pyelitis in pregnancy cannot be differentiated from cystitis with fever without ureteral catheterization. No doubt, many cases have been reported, before methods of ureteral catheterization were simplified, in which this mistake has been made.

Appendicitis is another disease which may be mistaken for pyelitis, on account of the right-sided pain and vomiting which may accompany it, as in case 1.

Septic endocarditis with cystitis, as in case No. 7 is also a possibility of the differential diagnosis. In this case, ureteral catheterization alone, prevented the operation, as there was an enlarged and palpable right kidney, with fever and pus in the urine.

Gall-bladder disease from its right-sided position, must also be eliminated in the diagnosis.

The course of the disease varies very much, but the onset is seldom sudden and the condition has usually progressed some time before its recognition.

It is believed that the usual course is an extension from the pelvis of the kidney to the parenchyma to cause a pyonephrosis. When the disease is a simple pyelitis, there is seldom any enlargement of the kidney, but this sometimes may occur with pyonephrosis and focal abscesses.

Those cases of staphylococcus infection are usually more severe than those of colon infection, and this has a bearing on the prognosis and treatment and may be noted by bacteriological examination of the kidney urine.

The treatment of the disease is usually expectant. If the patient is put to bed and kept quiet, in such position as to remove the weight of the fetus from the affected side, recovery is the rule. Thus, the patient should be upon the left side in right-sided pyelitis.

Large quantities of water should be given, amounting to 6-8 glasses daily apart from meals. Some writers advocate restriction of liquids, but this is not advisable.

Diet should be soft or liquid, and contain no meat in order to make it as unirritating as possible to the kidney. Salt should be restricted in order to relieve the kidney, and the patient should abstain from all articles which contain salt in the raw state or require much salt to make them palatable. The diet should be mainly sweetened, unsalted butter, rice cooked in milk, sago, baked potatoes, puddings, gruels, vegetables without salt, fruit, weak tea, lemonade, milk, but no coffee. This diet allows of sufficient variety and sustains the patient.

The use of a urinary antiseptic and diuretic is of value. Hexamethylenamine, gr. 5, three times daily, is useful, but it should be given with care, and not in excessive doses. In large doses, it is a direct kidney irritant, and hemorrhagic urine has been noted in five cases in the writer's experience. Beardsley (14) has collected many additional cases of its tonic effect. It is, however, of value, and should be used carefully. Combined with sodium benzoate, it is much less irritating and a useful prescription is the following:

Hexamethylenaminegr. v
Sod. Benzoategr. x
Sod. citrategr. v
Elixir Buchu ad℥ii

Dose: ℥ii three times daily in a full glass of water.

Catheterization of the ureter itself seems to have a beneficial effect upon the patient in promoting drainage and clearing the ureteral passages. Lavage of the kidney pelvis may be of some value in the early stages, but can be of little use in pyonephrosis and pyelonephritis. It should be done very carefully, and not more than 4 c.c. of a protargol 2% solution introduced. It has been known to induce acute exacerbation of the condition. Bladder lavage, whether cystitis is present or not, should be done, as it is said to have some influence on the excretion of pus.

The bowels should be taken care of, and, if the amount of urine is not satisfactory, saline enemas or proctolysis should be given.

If the patient does not improve under the expectant treatment, and, if the amount of pus in the urine does not decrease, induction of labor should be considered.

Induction of labor is advocated because of the possibility of extension of the disease to both kidneys, and because the removal of the fetus usually has a marked beneficial effect upon the course of the disease. It should also be remembered that a considerable proportion of these babies are either stillborn (as in two cases here) or die soon after birth. So that induction, especially if the patient is at or near term, should be considered before nephrotomy.

If the patient is not near term, and there is evidence of extensive and serious infection of the kidney, nephrotomy may be possibly the choice. But it is to be remembered that, if nephrotomy is done, the infection must first be known to exist in only one kidney, and the condition of the uninfected kidney determined by ureteral catheterization.

The various writers usually range themselves into two camps; one advocating in-

duction of labor, and the other protesting against induction and lauding nephrotomy. As is usual, when there is such marked divergence of opinion between good scientific observers, both are right. There is a place for both methods of treatment in different forms of the disease. If the child is near term, there is no reason why induction should not be done. And nephrotomy or nephrectomy should be reserved for those cases of unilateral severe infection with focal abscesses or pyonephritis.

It is possible that both may be required in some cases, as induction of labor may not stop the processes of infection in a kidney with advanced pyelitis and pyonephrosis. If the condition does not improve with removal of the child, as was the result in two cases here reported, nephrotomy should be considered if the infection is unilateral. But if infection is bilateral, the prospect of surgical treatment is not encouraging.

The patients, as a rule, bear surgical treatment well and without miscarriage.

There are usually no after-effects from the disease if the patient gets well under the medical treatment. One case, however, which had pyelitis in pregnancy, was referred to me for hematuria eight months after childbed, and the hemorrhage was of such a degree that nephrectomy was done. The patient recovered promptly.

One case here reported was watched through a second pregnancy, and there was no recurrence in spite of the fact that there was a chronic cystitis, with ulceration of the bladder, supposedly syphilitic.

The course of the disease is in general not severe and is easily amenable to medical measures; but it may be severe, and undoubtedly is so when the infection has advanced to invade the kidney substance itself.

Cases of Pyelitis:—

Case I:—*Double Pyonephrosis, pyoureter; Staphylococcus pyogenes Aureus; Septicaemia.*

Clinical History:—Primipara. Patient was sent to the hospital for irrepressible vomiting when 8½ months pregnant. She was much emaciated and weak. Temperature 101°-102° at night and usually subnormal in the morning. The vomiting which had persisted for two weeks, was controlled by purgatives, dieting and saline enemata; but the fever persisted. The urine showed a few pus cells, but no albumen. The patient was delivered at term of a dead child. Temperature went higher after delivery, and the patient died on the same day.

Post Mortem Examination:—

Left Kidney.—Measures 11x5.5 cm. The capsule strips readily. The surface of the kidney is pale and is dotted with purulent foci, which extend into the kidney substance. On section kidney tissue is exceedingly pale. Occupying the pyramid in several places are small abscesses from 2 mm. to 12 mm. in diameter. These abscess cavities are surrounded by a distinct hemorrhagic zone. In some of the pyramids near the point can be seen minute pin point opaque areas extending into the tubules. The pelvis of the kidney contains a small quantity of purulent material, and the surface is somewhat hemorrhagic. The glomeruli are visible and the cortex measures 8 mm. in thickness. In numerous areas the infection can be seen extending up along the tubules. There is marked cloudy swelling. Left ureter slightly dilated.

Right Kidney.—Measures 11x6x4 cm. Capsule strips readily; surface pale and is studded with numerous small abscesses. There is one retention cyst, 1 cm. in diameter, on the surface. On section, the tissue of the kidney is very pale and is thickly studded with small abscesses which appear to extend up along the tubules and in places show large areas of necrosis. As in the other kidney the abscesses are surrounded by a hemorrhagic area. The cortex measures 6 mm. The pelvis of the kidney is much dilated, contains a small

quantity of purulent material and its mucosa is markedly hemorrhagic.

Bladder.—Contains about 60 cc. of turbid straw colored urine; beyond some congestion, its mucous membrane is of normal appearance. The right ureter, just where it passes over the pelvic brim, becomes markedly dilated and at a point near the kidney measures 2.75 cm. in diameter. Throughout the dilated portion the mucous membrane is dotted with hemorrhages, and in some places clots have formed. On the left side, 12 cm. above the ureteral orifice, the ureter is dilated and measures .75 cm. in diameter, while near the kidney it measures 1.75 cm. in diameter. The mucous membrane is hemorrhagic in places. Both ureters in the region of their entrance into the bladder are of normal appearance.

Uterus.—Measures 16.5x11x8 cm. There are lateral lacerations of the cervix most marked upon the right side. The fundus of the uterus contains a considerable amount of clotted blood. The interior is much roughened and the surface is exceedingly irregular. Uterine muscle is of normal appearance. The vagina is much dilated and the mucous membrane shows numerous small hemorrhages. Ovaries and tubes are normal. Placenta is normal.

*Microscopic Examination.—Kidneys:—*The greater portion of the substance shows marked cloudy swelling. Scattered here and there through the organ, usually along the group of tubules, are areas in which the kidney substance is densely infiltrated with cells, both polynuclear and small round cells. Some of these cells are in the lumen of the tubules, others are between the tubules. Associated with these lesions is a certain amount of hemorrhage between the tubules and a considerable degree of necrosis of the kidney cells. In some places there has been an extensive breaking down of the kidney substance with the formation of abscesses. The vessels are in places plugged with bacteria.

*Bacteriological Examination:—*Cultures were taken from heart's blood, liver, spleen, both kidneys, pericardium and mesenteric gland.

Cultures from heart's blood, liver, spleen and both kidneys showed a coccus in pure

culture which liquefied gelatin, coagulated and produced acid reaction in milk and produced a marked yellowish growth on potato, corresponding in all particulars to the staphylococcus pyogenes aureus.

Pathological Diagnosis:—Infection of both kidneys with cloudy swelling. Dilatation of both ureters with pyo-ureter. Slight pyonephrosis. Acute splenic tumor. Cloudy swelling of liver. Swelling of mesenteric glands. Slight arteriosclerosis. Persistent Meckel's diverticulum. Enlarged uterus just after labor. Infection of kidneys with staphylococcus pyogenes, aureus, associated with general infection of blood and organs with the same organism.

Case II:—Pyonephrosis—Colon Infection.

Clinical History:—Para ii, age 32. Well formed, well nourished woman, was admitted to the hospital 7½ months pregnant and in labor. No fetal heart was heard. She complained of having had chills and fever for two days and pain upon the right side. Temperature 101.4°, pulse 120. Delivered 8 hours after admission of a dead fetus. Temperature next night 100.2°, pulse 100. Second day temperature rose to 102.4°, and pulse 104. Large quantity of pus was found in the urine. Pain on right side continued and was referred down along the ureteral course.

Ureters were catheterized and pus found in both kidney urines. Colon bacillus was recovered from kidney urine. Bladder showed a chronic trigonitis. Patient was put on medical treatment with excess of liquids, hexamethylenamine, sodium benzoate and buchu, and did consistently well for 9 days. The pulse and temperature came to normal and the amount of pus steadily decreased in the urine. On the tenth day the temperature shot up to 101°, pulse to 96, and the patient went into shock and died on the 13th day, never recovering from the shock, and passing into coma in spite of intravenous saline and stimulants of many kinds.

Post Mortem Examination:—

Right Kidney:—Measures 10x5x4.5. Capsule strips with difficulty. A moderate number of fibrinous plaques between the peri-renal tissue and the under surface of the

liver. On section, kidney is pale, soft, and there is moderate dilatation of the pelvis. Cut section is mottled in appearance and in the kidney substance are multiple abscesses of creamy-white pus, varying in size from a pin point to the size of a pea. There is moderate cloudy swelling and right ureter is not dilated.

Left Kidney:—Shows a similar condition, but less marked. There are not so many abscesses, nor are they of as great size—largest measures 5 cm. Pelvis of kidney is not dilated, and left ureter is not visibly dilated.

Bladder contains a small amount of straw colored turbid urine. There is moderate congestion about the trigone, and there are hemorrhagic spots in places. The orifices of the ureters are large, patent, and moderately congested.

Uterus:—The uterus is large and measures 15x12x7. The fundus contains clotted blood, with an irregular and rough mucosa. Vagina is much dilated and shows small hemorrhages.

Microscopic Appearance:—

Kidney:—Cloudy swelling. Dense infiltration in areas of small round cells and polymorphonuclears. There is moderate necrosis of kidney cells and formation of abscesses.

Pathological Diagnosis:—Infection of both kidneys. Pyonephrosis. Enlarged uterus after labor. Acute splenic tumor.

Case III:—Cystitis—Pyelitis in Pregnancy:—

Patient was referred for sudden colicky pain in the right side, with temp. 101.4°, pulse 120. Para i, 7½ months pregnant. Pain and tenderness was marked, and had been present with increasing severity, for a week. There was marked frequency of urination, more pronounced at night, and when she made efforts to urinate, it caused a pain in her right side.

Temperature had been remittent 100°-103°, for one week, and pus was present in the urine. Patient gave a history of bladder and cervical infection following marriage and before pregnancy, had been under treatment for syphilis contracted from her husband.

Cystoscopic examination showed a marked hypertrophic cystitis, with considerable oedema and hyperaemia. There was marked exfoliation of pus and shreds. At the fundus of the bladder showed a granulating ulcer, 2x2 cm., with a whole false membrane. The right ureteral orifice was markedly patent, while the left was slightly so. Ureters were catheterized, and the right kidney urine sp. gr. 1016, alkaline, contained pus cells, and bacteriological examination showed a mixed culture of colon and staphylococcus albus.

Left Kidney:—Urine sp. gr. 1018, acid, contained no pus and was sterile. Patient was treated expectantly and improved. The bladder was washed out and treated by protargol 5%. The patient was also given mercurial treatment. The urine cleared up but not completely, and the patient was delivered of a live child at term.

The bladder condition did not improve markedly, but became somewhat better. One year after the delivery the patient became pregnant for a second time, and, apart from her chronic cystitis, had an uneventful pregnancy, until 8 months when she was delivered of a macerated syphilitic fetus.

Case IV:—*Cystitis Pyelitis:*—

Para ii, 6 months pregnant, complained of pain in right side and back for several days. There was tenderness in right iliac region and down toward the right thigh. Temperature had been 102° for two days, with headache and nausea. There was pus in the urine, but no complaint of frequency or pain on urination. Cystoscopic examination showed a bladder with a very moderate trigonitis and a patulous right ureteral orifice. Right kidney urine obtained by ureteral catheter, showed pus in moderate quantity, while in the left were a few blood cells alone, thought to be due to the manipulation.

Patient was put on liquid diet, postural treatment hexamethylenamine, sodium benzoate and buchu. Temperature was normal on fourth day and continued so. She was delivered at term.

Cases Simulating Pyelitis in Pregnancy:—

Case V:—*Cystitis in Pregnancy with Fever:*—

Patient was in eighth month of pregnancy and referred with a presumptive diagnosis of pyelitis of pregnancy. There was pain on the right side; temperature 100° to 103°, remittent and pus in the urine.

Cystoscopic examination showed a marked hypertrophic cystitis with oedema and congestion. There was much exfoliation and desquamation of epithelium and pus. The mucus was boggy and oedematous. The ureteral orifices were swollen and congested.

The bladder was washed out with quinine bisulphate 1-1000 and the ureters were catheterized. The kidney urine was found clear and contained no pus cells. Patient was put upon bladder irrigations and protargol 5%. Temperature was normal second day and continued so.

Diagnosis:—Cystitis in pregnancy.

Case VI:—*Cystitis in Pregnancy with Fever:*—

Para ii, 7½ months pregnant, referred because of pus in urine and abdominal pain. Temperature for five days has been 101°-102° remittent. Pain on right side was not marked. Cystoscopic examination showed a moderate cystitis and ureteral catheterization showed clear kidney urine.

Case VII:—*Cystitis in Pregnancy. Septic Endocarditis—Fever:*—

Patient was seen when 7 months pregnant in consultation on account of her heart and kidney condition. She had mitral stenosis and chronic nephritis. Expectant treatment with rest in bed was advised for a few days, but, as no improvement resulted, induction was advised. Induction was done by her physician and afterwards she showed evidences of infectious endocarditis. Ten days after delivery pus appeared in the catheterized urine, and she complained of pain on the right side. The right kidney was enlarged and easily palpable. Temperature was remittent 101°-104°. Pulse 110-140.

Patient was sent to the hospital for further investigation with a tentative diagnosis of septic endocarditis and pyelitis of pregnancy.

Cystoscopic examination showed a moderate cystitis with no pus in either kidney urine or ureteral catheterization. Patient was put upon bladder treatment and anti-streptococcic vaccine. She remained

six weeks in the hospital, but eventually recovered.

Diagnosis.—Septic endocarditis—cystitis in pregnancy.

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SOME CLINICAL OBSERVATIONS ON BLOOD PRESSURE WITH SPECIAL REFERENCE TO THE EFFECT OF PROSTATIC MASSAGE.¹

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In discussing the subject of blood pressure from clinical standpoints I do so not with the intent of adding anything especially new to our general knowledge of this very important subject, unless it be the effect of prostatic massage. Altered blood pressure must be considered a symptom or state and not a disease. It is dependent upon such a variety of conditions that its clinical interpretation is often difficult and

sometimes misleading. Several years ago in a discussion on this subject I heard it stated that nitroglycerine and nitrites in general have only a transitory effect in lowering blood pressure due to arterial disease or other causes. My experience at least seemed to me to be different. I had repeatedly noted what I thought permanent or prolonged changes in the character of the pulse under the use of the nitrites. At the time of the discussion I had no definite data at hand with which to substantiate my opinion and since that time I have not been so active in keeping records as perhaps I should.

There are many recorded observations of the changes which occur in blood pressure after the administration of a dose of nitroglycerine. There is always a quick and marked fall and a gradual return to the normal point, the whole phase lasting not longer than fifteen or twenty minutes. Accordingly this drug has been employed chiefly for its transient effect, as for instance in attacks of angina pectoris, asthma, or apoplexy. In looking over my cases I have picked out a few that will serve to illustrate the points I wish to consider this afternoon.

I think the majority of observers are of the opinion that the sense of touch is not trustworthy for comparative blood pressure records, although no less an authority than Sir William Broadbent emphatically stated at the Toronto meeting of the British Medical Association, that the educated finger is better than any instrument. By this method we make a note today of a blood vessel being straight or tortuous; its tension high, good, fair, or low; its quality full, small, quick, rapid or thready; its bulk plainly felt after compression, and tomorrow, or more fre-

¹Read by invitation, Kalamazoo (Mich.) Academy of Medicine.

quently several days later we make another observation with only our memory to serve us as a comparison of the degree of alteration. The feeling of many pulses in the interim has doubtless distorted our accuracy of judgment.

In making blood pressure records I have frequently found my previous opinion of the character of the pulse altered by its expression in millimeters of mercury. The hard full pulse with an up stroke that strikes the finger with quick force is never misinterpreted. It is always one that goes with high tension. Shading differences of such a pulse are difficult to recognize. For the most of us some instrumental means of recognizing small as well as great changes is most satisfactory. Instruments which eliminate as far as possible the personal equation should be chosen. The study of a pulse tracing made with the sphygmograph gives an idea of the pressure at a glance. It does not however unless in conjunction with a mercury manometer, give any trustworthy record of changes that can be expressed. The chief use of the sphygmograph is for recording and interpreting the movements of the heart and the blood coursing through the blood channels.

The mercury manometer is the only instrument of precision we have at our command for clinical records. It is now well agreed that the best form of apparatus is one after the idea of the Riva Rocci machine with wide armlet, 12 cm's. These instruments register the systolic pressure and may be connected with a tambor and chymograph for the registration of the diastolic pressure. The systolic pressure is obtained by taking the reading after the first return of the pulse. The diastolic registers the maximum pulsation of the

artery and is always considerably lower than the systolic. When a blood pressure is reported it is usually understood to be systolic unless otherwise stated.

The force of the heart, the resistance against which it acts, nervous, and psychic influences are the factors which sustain and alter blood pressure. All of these factors must be considered when we endeavor to interpret the estimated blood pressure in a given case. Under normal conditions the pressure is higher after exertion, higher after sitting than after lying. There is always a tendency for the pressure to assume a level. This is well illustrated in the case of the athlete. At the beginning of a forced run there is an enormous rise in the pressure due to the enforced heart strain. This gradually sinks and assumes a new level when the runner gets his so-called second wind, and returns to normal after the run. The same is true, but to a less extent, of the patient who comes to the office for observation. When he enters, particularly if he has come up a flight of stairs, his pressure is often ten or fifteen millimeters higher than after he has remained quiet for a few minutes. The effort of taking off the coat and rolling up the sleeve gives a record on the manometer several points in advance of the record obtained during rest. In making permanent records it is therefore necessary to record a pressure level. The pressures I will report are all pressure levels. My plan is to take the pressure immediately after taking off the coat and twice after having remained quiet for five or ten minutes, the last two records must harmonize closely.

Suggestion has a powerful effect on arterial pressure. A man is sitting quietly reading a book, something he reads

causes a quick uncontrollable flush to come into his face, something has momentarily lowered his pressure. The effect of mental emotion on blood pressure has been well illustrated by the classical case of John Hunter, the victim of angina pectoris who said "My life is in the hands of any rascal who chooses to annoy and tease me." Unconsciously in susceptible individuals momentary changes may be produced by the attitude we assume toward them. The increased blood in the splanchnic system during the digestion of a meal causes lowering of the peripheral blood pressure. Normally there is always a balance maintained; but in those individuals who complain of chilliness and clammy hands after meals there is an over balance on the splanchnic side amounting to stagnation. On the other hand anything producing constriction of the splanchnic vessels causes a rise in pressure. A few days ago I was called to see a patient with subinvolution of the uterus. I had a book bound very tightly above the uterus. In an hour's time the patient's face became red and she complained of severe headache. Loosening the bandage stopped the headache. This can be explained on the same grounds as Oliver's test for the differentiation of undue splanchnic congestion. Oliver observed that when a weight is placed over the abdomen of a patient with subnormal pressure due to hypotonia an elevation of blood pressure results from the dislodgement of stagnated blood in the abdomen.

Curschmann has shown that pain produces a rise in blood pressure. When he applied the Faradic current over the upper part of the thigh in normal persons and malingerers a distinct rise in pressure occurs, whereas in hysteria and spinal

disease the pressure is unchanged. An attack of angina pectoris occurred in a patient while Norris was taking his blood pressure. He noted a rapid rise of fifty mm., followed by gradual fall coincident with the disappearance of the pain. It has also been demonstrated by Beyer, Rhombberg, and Miller that pleasurable emotions, agreeable odors and tastes produce marked peripheral vaso-dilation, while excitement, worry, unpleasant odors, tastes, noises, and other sensations bring about vaso-constriction. Stimulation of the sciatic nerve by the Faradic current increases blood pressure. Mental pain such as that present during an attack of melancholia induces hypertension which disappears with relief from the state of anxiety. It is also quite well known that the motor excitement of mania causes hypotonia, the reverse of the condition found in melancholia.

EFFECT OF PROSTATIC MASSAGE ON BLOOD PRESSURE.

A short time since I examined a patient who complained of some urinary symptoms. I found that he had a slightly enlarged prostate which I massaged for one or two minutes. I had previously taken his blood pressure and decided to take it again. I was interested to note a distinct lowering in the pressure. The prostatic massage experiments which I report this afternoon were planned in the beginning to control my first observation which I thought might be due to some instrumental defect. It will be seen from the illustrations that similar and definite changes occur in the three cases cited.

Charts 1, 2 and 3 are from records of the same individual. This patient, male, aged 62, had a distinct hypertonia, subject to considerable variation under nervous

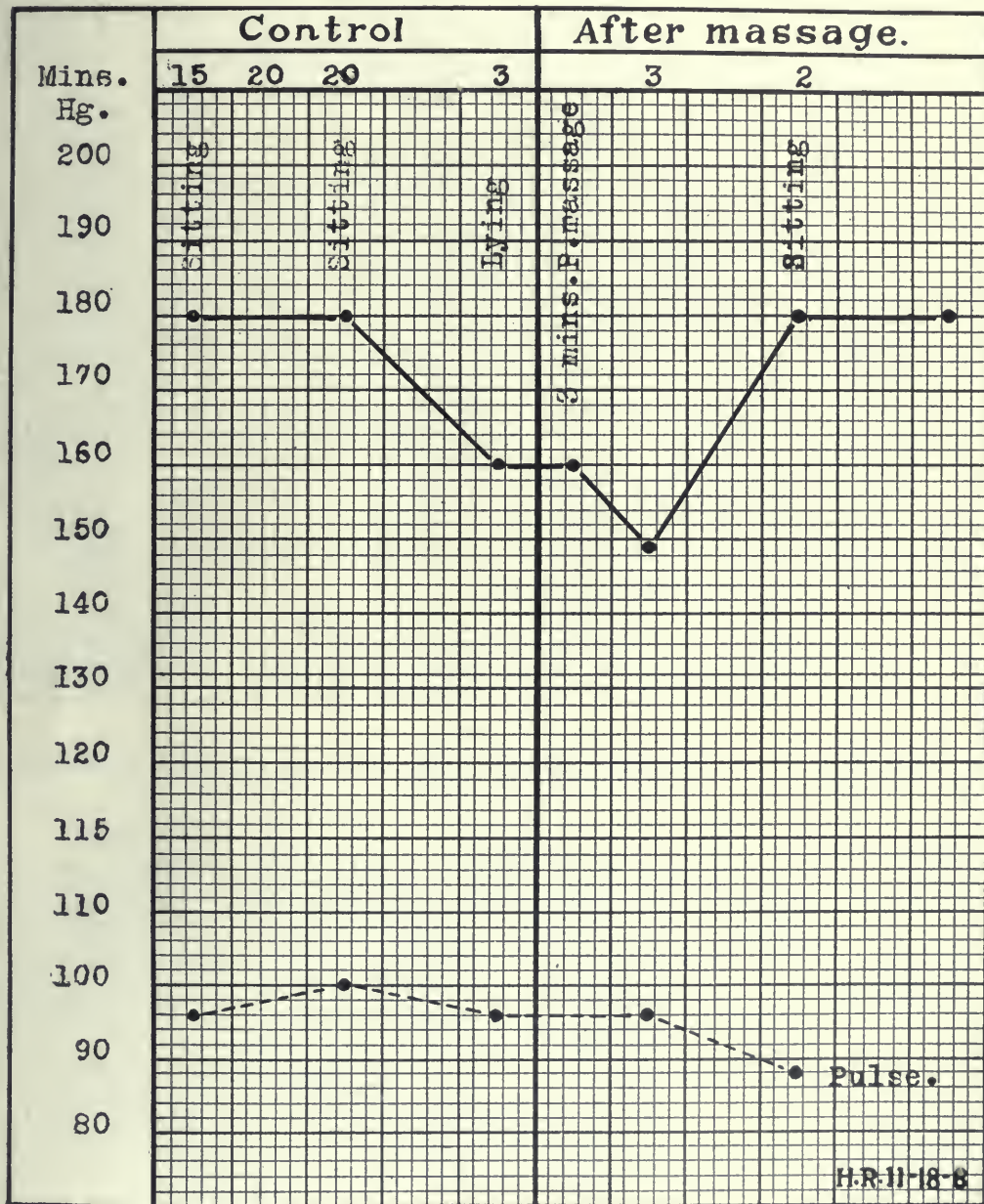


CHART 1. CASE I.

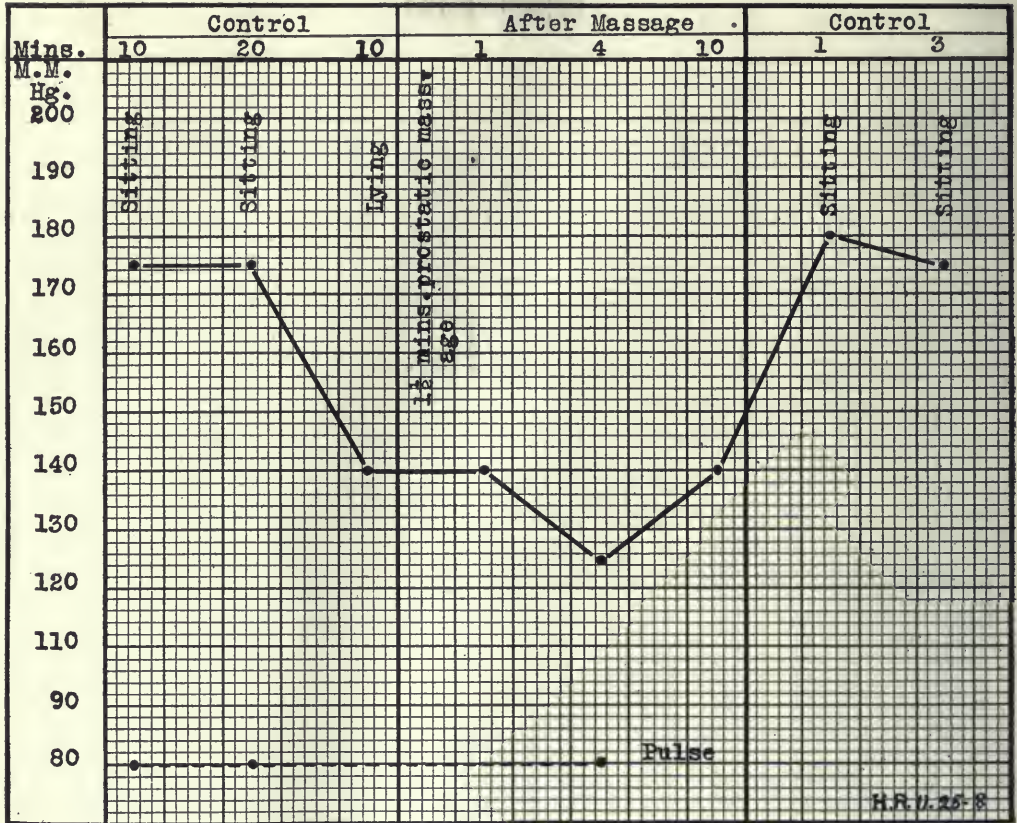


CHART 2. CASE I.

This chart shows the marked effect of posture commonly seen in hypertonia as well as of prostatic massage.

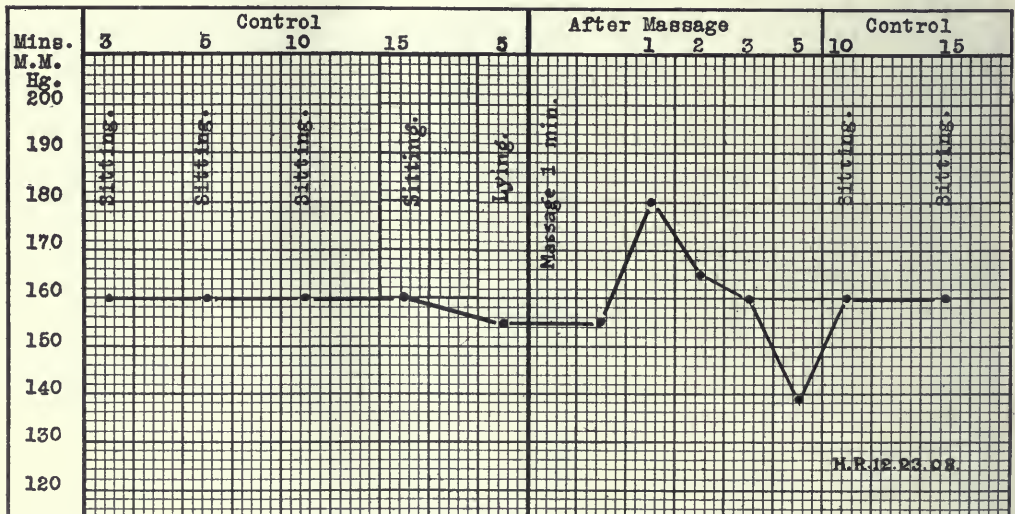


CHART 3. CASE I.

Showing the initial rise and subsequent fall in pressure after prostatic massage.

and psychic influences. The effect of posture was also marked.

Exp. 1. The prostate was only slightly enlarged, the groove was not obliterated, both lobes were tense, manipulation produced distinct clear moisture in the an-

a pressure record was taken and a fall of over ten millimeters recorded. The patient then sat up, after ten minutes the pressure resumed the normal point.

Exp. 2. The second observation was made a week later. This time the massage was continued only 1½ minutes. An observation was made one minute later and the same reading was obtained, in four minutes a fall of 15 millimeters was recorded and in ten minutes the pressure was back to the previous lying pressure. One minute after sitting up the pressure assumed the sitting pressure previously obtained. No fall in pressure immediately following the massage suggested further observation on the time period of the reaction.

Exp. 3. The manipulations produced a little pain. One minute after the pressure had risen 25 millimeters, then gradually fell as is shown in the chart until five minutes when it reached a point 16 millimeters below the lying pressure.

CASE II, chart 4 shows very little effect from prostatic massage, there is however a tendency to an initial rise and a subsequent fall in the pressure. Prostate negative.

CASE III. Prostate slightly enlarged, groove not obliterated, lobes distinct. Cen-

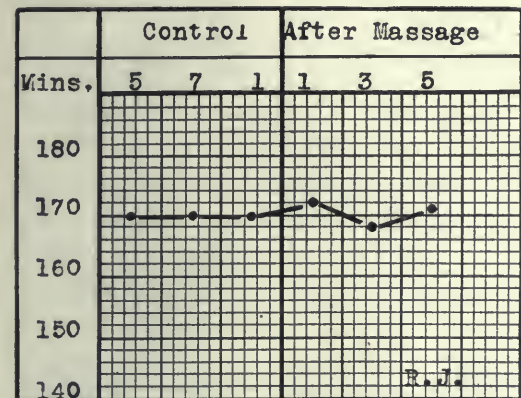


CHART 4. CASE II.

After prostatic massage practically no change is observed in the pressure although the initial rise and subsequent fall are indicated.

terior urethra and distinct lessening in the size of the organ. The manipulations were continued 3 minutes, 3 minutes later

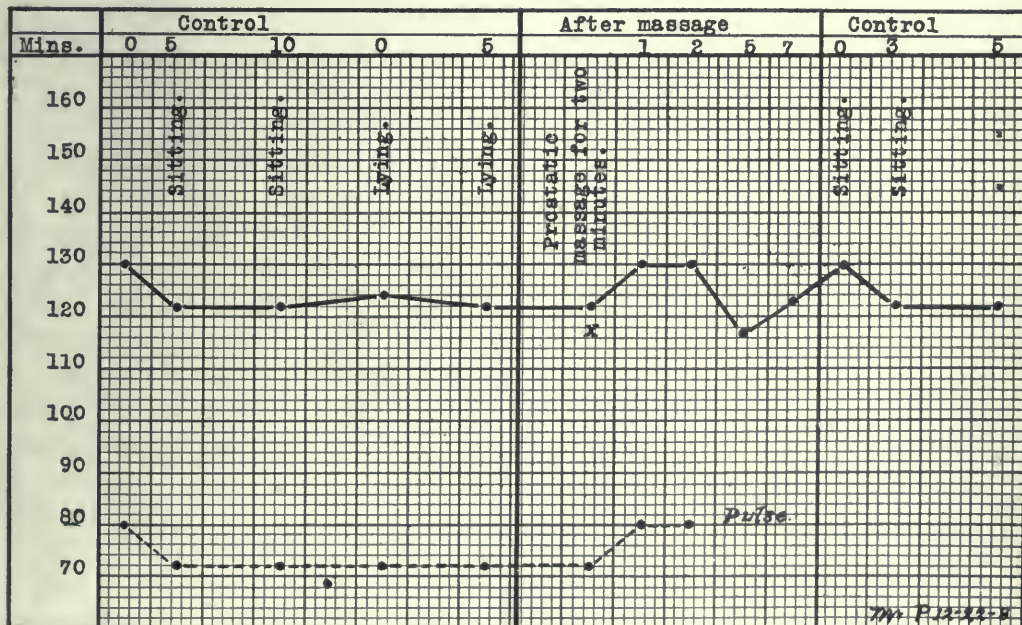


CHART 5. CASE III.

tripital massage reduces it quickly almost to flatness with slight clear urethral discharge. The initial rise is well marked and sustained for two minutes, followed by a distinct fall at 5 minutes, back to the lying pressure in seven minutes. There was a corresponding rise in the pulse following the manipulation.

The immediate effect of prostatic massage is to cause first a rise in pressure followed by a fall which in some instances is quite remarkable, with a return to normal not later than ten minutes after the manipulations. Stimulation of the schneiderian membrane with the Faradic current, and the vagina, and rectum by manual stimulation have been shown to induce marked lowering of pressure. Pain increases blood pressure.

The impression has gained ground that arteriosclerosis is always associated with high blood pressure. As a matter of fact arteriosclerosis may be about equally divided between the state of hypertonia and hypotonia. I have three cases of advanced arteriosclerosis at the present time with blood pressures varying from 90 to 120. The disease is marked in the peripheral arteries. The radials are round, and full, tortuous and palpable after compression. There is apparently no discoverable cardiac enlargement and no accentuation of the second aortic sound. These are usually cases of peripheral arteriosclerosis with little if any involvement of the capillaries or splanchnic vessels. On the other hand we may have high pressure with soft radials due to splanchnic involvement alone.

Should one picture a case of typical arteriosclerosis with hypertension he would group the following phenomena: high tension pulse, beaded hard arteries, palpable after compression, hypertrophy of the left

ventricle, accentuated second aortic sound, signs of interstitial nephritis.

Treatment. In the treatment of high blood pressure I have made use of the nitrites—nitroglycerine, sodium and potassium nitrite. It has been proven that sodium and potassium nitrite and erythrol tetranitrite have a more prolonged action than nitroglycerine. The fall in pressure is slower and the subsequent rise delayed. For permanent lowering of pressure theoretically sodium and potassium nitrite are to be chosen. The method of treatment aims at repeated periods of pressure lowering with the hope that sooner or later the

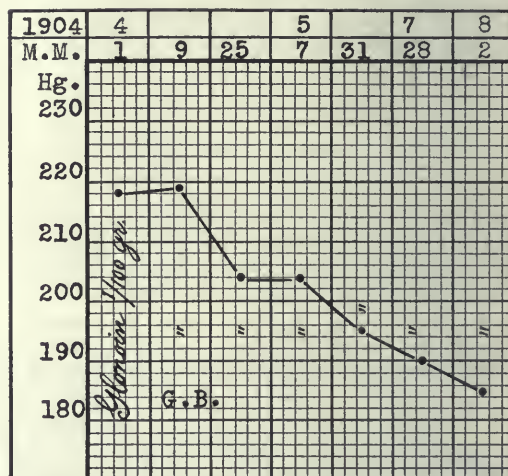


CHART 6. CASE IV.

time will come when the continuous administration will cause a greater delay, in the pressure reaching its height. I am in the habit of giving three and four doses daily and continuing the remedy over considerable lengths of time, always controlling my dose by blood pressure records. When the pressure reaches what may be considered the low point sought the remedy is gradually withdrawn.

The nitrites should never be continued for long periods without systematic control. Some individuals are quite sus-

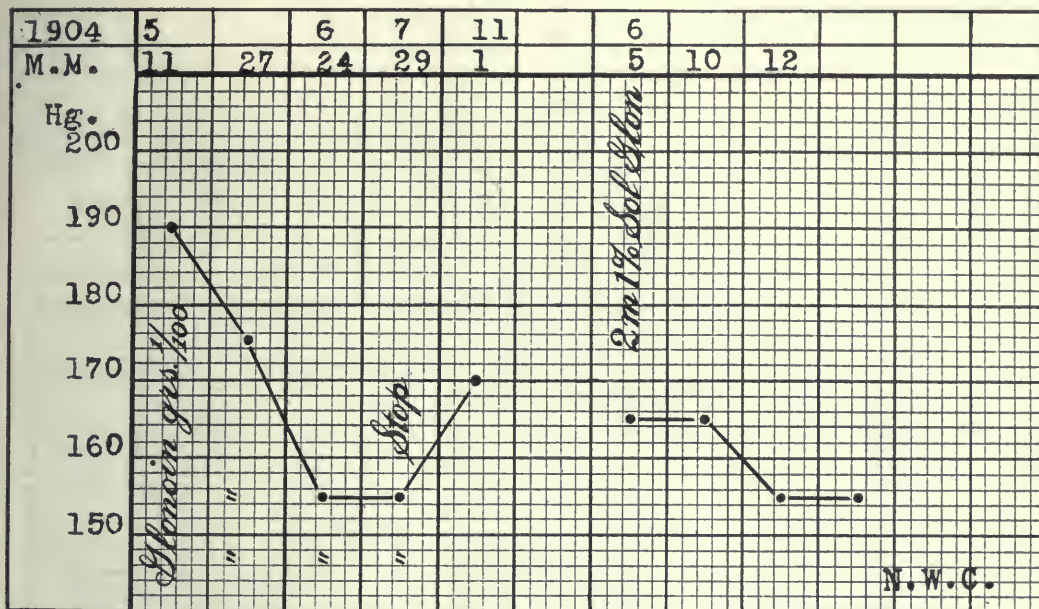


CHART 7. CASE V.

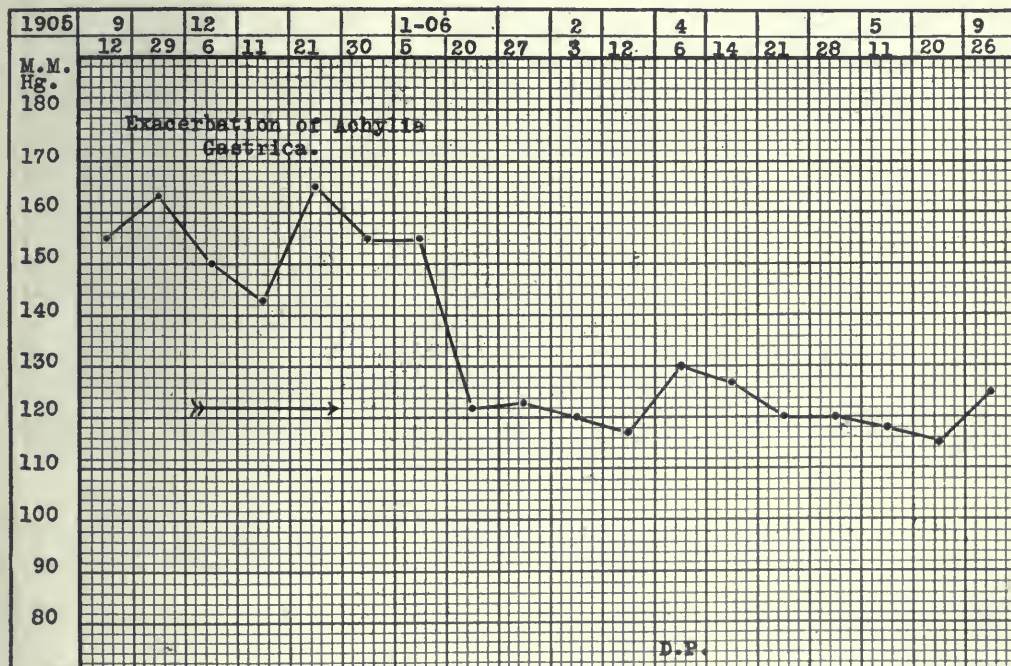


CHART 8. CASE VI.

ceptible to their action. Some very important reports have recently been published regarding subnitrate of bismuth poisoning in children and in patients taking large amounts for radiographic purposes. These cases have all showed a pronounced methemoglobinaemia with

ganism must bring about a tremendous lowering of blood pressure. This is a point which requires elucidation.

I will give a brief outline of a few cases and illustrate them with lantern slides. As I wish to consider the condition of blood pressure as influenced by the nitrites, I

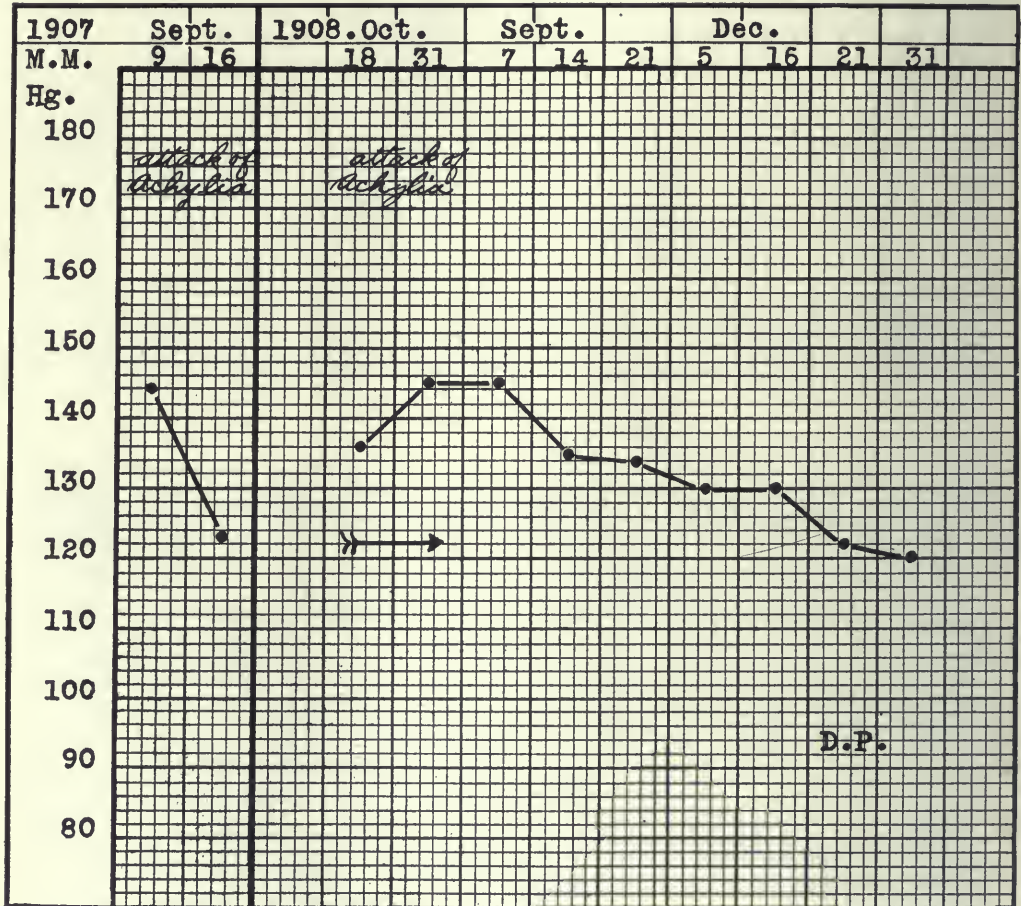


CHART 9. CASE VI.

more or less cyanosis, collapse and in some cases death. It has been found that bismuth sub-nitrate decomposes very readily in children's stools forming nitrites and that X-rays decompose the nitrate setting free the nitrite. The methemoglobinaemia is due to the nitrite poisoning. The elaboration of so much nitrite in the or-

ganism must bring about a tremendous lowering of blood pressure. This is a point which requires elucidation.

CASE 4. G. B. Aet. 67. Advanced arteriosclerosis, angina pectoris, the patient sought relief from dizziness, substernal distress, shortness of breath on exertion. He had to stop two or three times going as many blocks. No intermittent claudication phenomena. He was put on pil nitroglycerine 1/100 gr. after meals

and at bedtime with the blood pressure changes noted in chart 6. In the fall he went to Cuba. I did not see him again until the following spring in consultation

CASE 5. Chart 7. N. C. Aet. 60. Arteriosclerosis. Chronic Gastritis. This patient sought relief from gastric distress, a sensation of fullness in the head par-

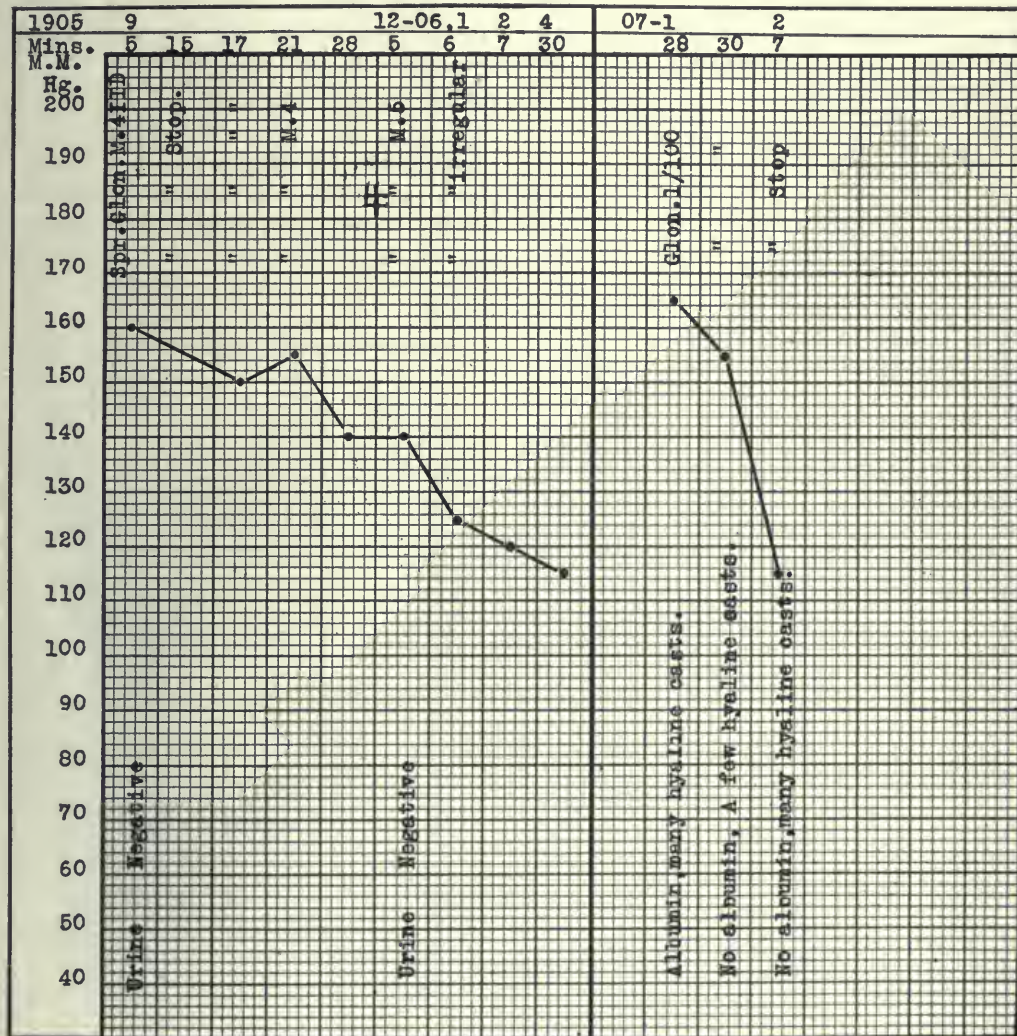


CHART 10. CASE VII.

1. Complained of cold extremities.
2. Complained of extremities being too hot, advised continue with glonoin.
3. Continued to complain of hot extremities, allowed to discontinue glonoin.
4. Returned to glonoin.

with Dr. Darling. He died after operation for impacted gallstone in ilium with ulceration. Autopsy was permitted on the abdomen and heart. The coronaries were calcareous and brittle, the heart was slightly enlarged. Urine and blood negative.

ticularly noticeable in the morning, confusion of ideas. His pressure was 190, pulse regular, arteries palpable after compression, tortuous. He made steady improvement from his symptoms on spirits of nitroglycerine from 2 to 4 minims of the 1% solution, from May 11, 1904 to

July 29. I did not see him again professionally until November 11, the pressure was 170, he was feeling well so I did not advise continuing the remedy. He returned the following June with a similar group of symptoms. Pressure 165, symptoms relieved by nitroglycerine. He took a lake trip the latter part of June, returned home feeling better, but was found dead in bed one morning. No autopsy.

CASE 6. Charts 8 and 9. D. P. Aet. 55. Achylia Gastrica. This patient had typical attacks of achylia gastrica with diarrhoeal stools. During the period from September 12, 1905, to January 5, 1906, the symptoms required constant watching. The attack subsided and he remained to all intents and purposes perfectly well until September, 1907, when he had another attack but of short duration. A third attack occurred in September of the following year. The patient had been abroad and had had a miserable summer. When I saw him in October the pressure was again high but gradually subsided with the abatement of his symptoms. There was no attempt to reduce blood pressure in this case. He did not seem to be suffering from high pressure symptoms and his pressure was never excessively high. The records were kept as a routine measure and may illustrate how bodily states of various kinds may influence blood pressure. This patient now at 59 is a remarkably well preserved man with excellent arteries but with a well marked gastrointestinal neurosis.

CASE 7. Chart 10. Miss H. A. Aet. 57. Arteriosclerosis mild. Interstitial nephritis mild. Complaints of sleeplessness, palpitation, gas in stomach, cold hands and feet, throbbing in the left temple, dizziness. The radials were slightly tortuous, easily compressed. She had a distinct hyperchlorhydria. During the first portion of the chart the urine was negative. I am unable to say that her hypertension was entirely due to her arteries. There was no accentuation of the aortic second sound. She did not sleep largely because she felt her heart beating. I put her on spirits of nitroglycerine. She returned two days later to tell me she must stop the medicine

because her feet and hands were now "so hot." I discontinued the remedy for two days, then encouraged her to begin again. She made steady and seemingly permanent improvement from now on. January, 1907, she returned with the same group of symptoms and in addition distinct urinary changes, albumin and large numbers of hyaline casts. The effect of the nitrite is shown in the chart. February 7 was the last time casts appeared in her urine. I have examined the case several times since. There has been no return of albumin or casts. With these findings the diagnosis of interstitial nephritis can be made.

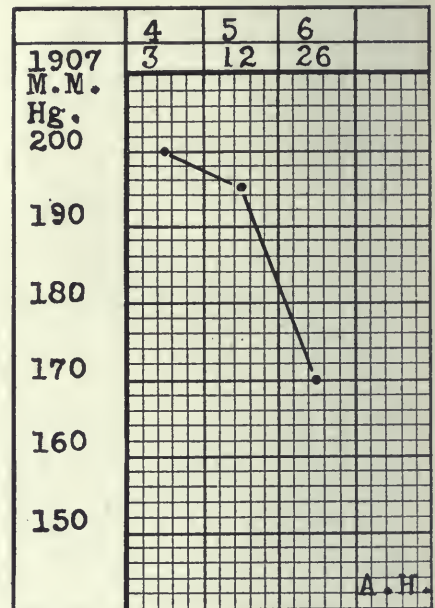


CHART 11. CASE VIII.

CASE 8. Chart 11. A. H. Aet. 58. Arteriosclerosis, attacks of acute myocardial insufficiency valvular lesions. This patient was observed at irregular intervals from April, 1907 to June. He had a distinct hypertonia. He was put on nitroglycerine 1/100 gr. t. i. d. and was fairly faithful about taking it. The patient has now a well marked myocardial insufficiency. While taking the glonoin the pressure remained down.

CASE 9. Chart 12. H. R. 64. Gastric neurosis, moderate arteriosclerosis. This patient is markedly subject to nervous influences. I have taken his pulse for months without finding it below 90, often much higher. Taken by himself at home 72-75. He has a marked hypertonia, fluctuations in his blood pressure are very great as will be seen by referring to the chart. There are no cardiac signs and no urinary changes. The nitrites have a marked effect in lowering his pressure as will be seen from his chart.

I should like to remark again that these cases are shown simply to illustrate hypertonia and the effect of the nitrites on this condition.

A NEW AND SAFE METHOD FOR THE SUBMUCOUS REMOVAL OF THE DEFLECTED BONY SEPTUM.

BY

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In the infancy of rhinology, when the head mirror was not yet used for diagnostic purposes, only those forms of nasal ob-

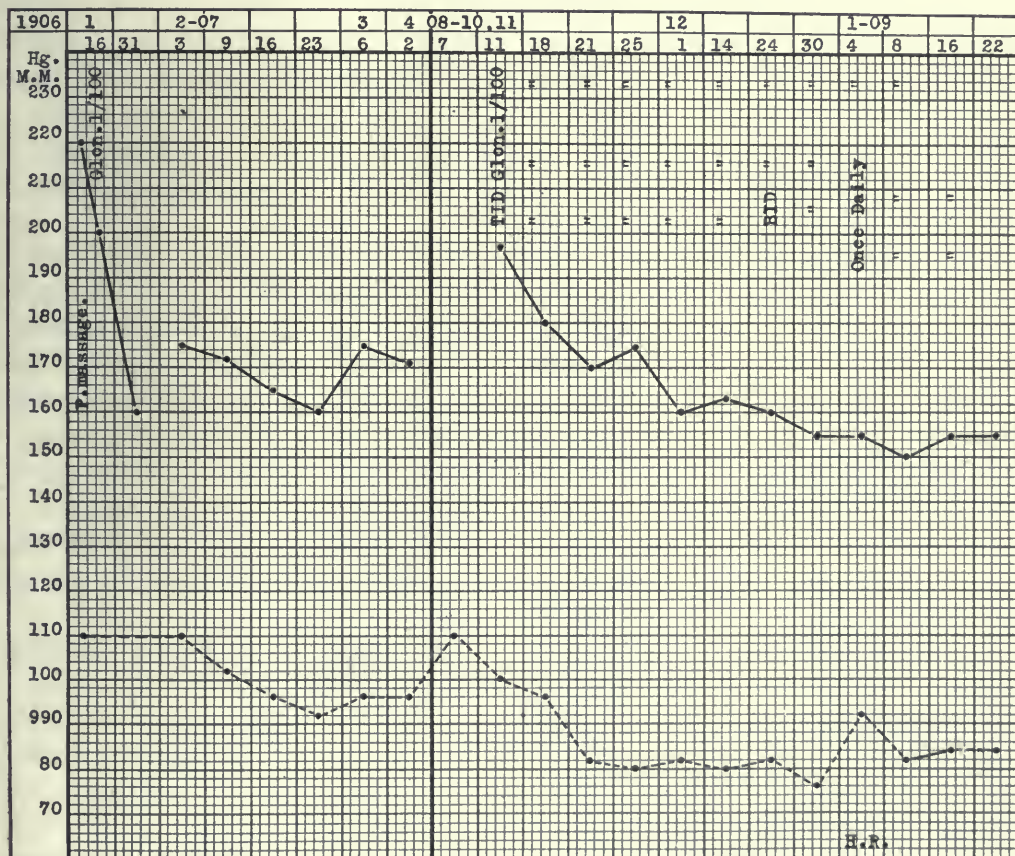


CHART 12. CASE IX.

structions were attended to whose causes could be recognized with the naked eye. Immense polypi or very large hypertrophies of the inferior turbinates, when protruding from the nostrils, were operated upon, whereas the pathological changes of the inner nasal structures were totally neglected, not only from a diagnostic but also from a therapeutic standpoint.

An old physician of the pre-rhinological era, told me how he at that time treated a "stuffed up nose." He simply pushed his sharp spoon into each nostril and curetted the nasal cavities to such an extent as to be able to freely bring his instrument backwards to the pharyngeal wall. When we take into consideration that anesthesia, both local and general, was not yet resorted to, we must look upon this "treatment" as a rather brutal and unscientific method to relieve nasal obstruction, especially when the latter happened to be caused by a deviation of the septum. Heretofore the deviation of the cartilaginous septum—that of the bony septum not yet having been known) was regarded as a *noli me tangere*, until there was invented a very ingenious instrument, by which a considerable part of the deviated portion was punched out, leaving a large perforation with all its accompanying ill effects.

When the use of reflected light gave a better view of the interior of the nose, the methods of dealing with the deviations of the cartilaginous septum became more rational. The above method was soon succeeded by a modification, in which a more or less rectangular piece of the cartilage was removed together with its mucous lining, with the idea of correcting the deviation by having the gap thus formed filled up by pressure through bilateral packing,

causing an approximation and eventual union of the edges.

The next popular method of straightening the cartilaginous deviation consisted in making a horizontal or vertical incision into the cartilage and forcing one part to overlap the other. A similar idea is the principle of the ingenious Asch operation, in which longitudinal and horizontal incisions were made into the cartilage by means of very strong cutting forceps; the overlapping parts were expected to unite in a straight line by the pressure of nasal splints which the patient had to carry in his nose for several weeks. Except for the sawing or chiseling away of bony spurs, the deformities of the bony septum have been perfectly neglected until recently when the submucous resection of both the cartilaginous and bony septum proved to be a rational treatment, not only for the former but also for the latter.

While the number of instruments on the market for operation on the nasal septum are very numerous, yet in the large majority of cases a very small armamentarium will answer all purposes. The instruments ordinarily employed by the writer are a nasal speculum, a scalpel, a dull and a semi-sharp (Hajek) periosteal elevator, the swivel knife, a stout forceps and the two bone sawing instruments, to be later described.

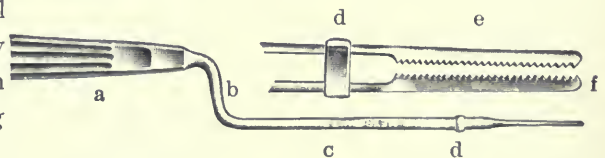
The submucous resection is performed in the following way:

An incision is made anteriorly on the convexity of the deviation, the scalpel directed parallel to the cartilage. The mucous membrane with its underlying perichondrium is incised until the cartilage is reached. The latter is then sep-

arated from its muco-perichondral lining along its entire length, the dull periosteal elevator working backwards towards the vomer, till the whole cartilaginous bony deviation is exposed on its convexity. Then the cartilage is cut through at the place of the primary incision, which is the most delicate part of the operation. If the finger is pushed into the nostril on the concave side, the sense of touch distinctly indicates when the point of the knife reaches the soft perichondrium after having left the rather hard cartilage. In this way perforation is avoided. With the dull periosteal elevator the concave side of the deviation is now separated. Then the whole deviated part contained in its perichondro-periosteal cul-de-sac is easily accessible to operative interference. The swivel knife is then slipped over the free border of the cartilaginous deviation and the latter removed by a backward, downward and forward movement. The now accessible bony structure can be attacked by two distinct groups of instruments, either of the punching or the breaking kind. The first are safer than the second, but prolong the operation unnecessarily by allowing only tiresome piece-meal work; and besides, in the presence of very thick bone, especially when combined with a very big spur, or when an obstructing broad maxillary spine has to be removed, only the group of breaking instruments by virtue of their strength can be relied upon. But the great disadvantage in the use of the latter is the lack of control. Not only may bigger portions of the non-deviated septum be broken away, but also a fracture of the upper jaw or even of the bones of the base of the skull may occur. It occurred to the writer that an improvement in the operation would

be to precisely remove a measured portion of the bony deviation.

After many months of experimentation the writer designed the following two instruments, which have given him the greatest satisfaction during the last year. Both instruments are of bayonet shape, consisting of a four-inch long handle and a shank whose fork-like end is raised three-quarters of an inch above the former. The fork is two inches long and contains at its end "Glogau's submucous saw," in the one instrument of a horizontal, in the other of a vertical direction. There are two saws on each of the instruments, one on each blade of the fork, facing each other and fitting into one another. As the saw blades are bent concavely to each other at their proximal end, the saws are closed pretty tightly by their own elasticity. While used they can be kept in close touch with the bony deviation by means of a ferrule forced over the bent part of the blades. The sawing surface of the horizontal instrument is one inch. The end of the vertical instrument is bent at a right angle, and the vertical portion of the fork, one-half inch



GLOGAU'S HORIZONTAL SUBMUCOUS SAW.

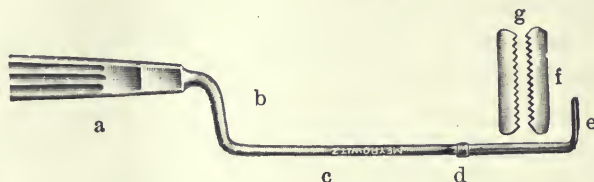
a, handle; b, shank; c, fork; d, ferrule; e, horizontal saws; f, V shaped space.

long, contains within its blades the two vertical saws. The tip ends of the blades when brought together enclose a V shaped space, allowing them to slip easily over the margin of the bony deviation. The instruments are made by Meyrowitz, N. Y.

The *modus operandi* with Glogau's submucous saws is the following:

After having made accessible the entire deviation by separating it from both perichondrium and periosteum in the above mentioned way, the cartilaginous deviation is removed with the swivel knife. The horizontal submucous saw is then slipped

spine, which may either be removed with the bony deviation, its basis being considered to be the lower margin of the latter, or may be sawn out separately, after the remaining part of the bony deviation has been removed. In both instances this method is far superior to the method of breaking, as well for the pa-



GLOGAU'S VERTICAL SUBMUCOUS SAW.

a, handle; b, shank; c, fork; d, ferrule; e, vertical portion of the fork containing on its two blades the saws f; g, V shaped space.

over the bony structure along the upper margin of the deviation, whereafter by horizontal sawing movements the bone, in the grasp of the two blades, is sawn through with perfect safety to the "cul-de-sac," the latter being only in contact with the dull outer surfaces of the blades. The instrument is then slipped over the lower margin of the bony deviation, which is sawn through in the same way. Now the vertical submucous saw is slipped over the bony deviation, backward to its posterior margin, where by vertical movements the bone is sawn through and removed in one piece.

To make the operation more rapid, the saws applied on the bony structure in the above mentioned way, need not go through the bone, it being sufficient to make a more or less marked indentation on its two surfaces. Now the entire bony deviation may safely be removed by some breaking instrument, the same as a glazier breaks off the amount of glass wanted, by grooving the surface with his diamond.

The horizontal saw is of great advantage in dealing with a broad maxillary

tient's safety as also his subjective sensations. The slipping off from a big bony spur of both punching and breaking instruments is avoided by Glogau's submucous saws, the spur itself being removed with the deviated portion it springs from.

With the submucous saws it is possible to remove, without resorting to the swivel knife, both cartilaginous and bony deviation in one piece.

In a paper read before this society December, 1908,¹ I called special attention to the frequency of septal deviation in both adults and children. Among 4,400 cases examined in one year at Mt. Sinai Hospital Dispensary in the service of Dr. Oppenheimer, there were 3,823 septal deformities, most of them being deviations. As this pathological nasal condition is able to cause serious complications of the accessory sinuses, the naso-pharynx and the middle ear, any improvement of the method of "straightening" the septum and thus restoring the normal aëration of the nasal "adnexa" may be at least worthy of

¹Nasal obstruction in children, "*American Medicine*," April, 1909.

a fair trial by the profession, before which the writer's submucous saws are brought for the purpose of increasing the safety and efficiency of submucous resection of the bony septum.

1184 Lexington Ave.

TUBERCULAR PERICARDITIS AND MYOCARDITIS.¹

BY

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Pericarditis occurring in tubercular subjects is not a very rare affection, but tubercular pericarditis in which the pericardium is infected by the tubercle bacillus is comparatively rare. The increasing attention attracted by tuberculosis has led to its being recognized more frequently. It has been observed in all ages and probably occurs most often in young adult life, and in males more frequently than females.

The view is becoming more and more widely accepted that the lymphatic glands are always the first seat of tubercular infection and that the various organs and tissues subsequently infected are invaded by way of their lymphatic vessels. Most cases of tubercular pericarditis develop secondarily to infection of other organs such as the lungs, pleura, vertebrae, peritoneum or even the intestines.

The reason for the rare and usually late invasion of the pericardium probably lies in its relatively scanty vascular supply. In tubercular pericarditis are found many of the lesions common to the other forms of pericarditis, as well as some of the lesions of tuberculosis. The pericarditis may be of the dry form, or it may be accompanied

by effusion. In the dry form the condition terminates nearly always in adhesion of the pericardial surfaces. In the form with effusion, adhesion may also occur after the absorption of the exudate has taken place. The effusion may be serous, sero-sanguinolent or hemorrhagic but rarely purulent. The quantity may be variable.

Myocarditis in some degree is present in all cases of pericarditis, and to it are chiefly due the symptoms of dyspnoea and disturbances of the circulation especially in the absence of effusion. If the infection of the myocardium is extensive there will be granular and fatty degeneration of the muscle which will be most marked in the superficial layers next to the pericardium. Tubercular deposits occur most frequently about the base of the heart especially that of the auricle.

In the majority of the cases there is a fibrinous exudate of variable degrees of thickness deposited chiefly on walls of pericardium. There may be excessive formation of new fibrinous tissue, at first grayish and translucent but later becoming white and firm as it is converted later into dense cicatricial tissue which firmly unite the pericardial surfaces. If the exudate is purulent it may become inspissated and this may in time be converted into a calcareous mass.

Symptoms:—As a rule the infection is latent throughout its whole course and is only discovered at a post-mortem examination. This is accounted for in the first place by the fact that the disease of the pericardium usually begins insidiously and runs a subacute or chronic course, and in the second place that the pericardial symptoms are overshadowed by the symptoms of lesions in other organs.

¹Read before the Lenox Medical and Surgical Soc. Mar. 26th, '10.

In acute cases there is usually a rapid effusion and the symptoms are similar to those of acute non-tubercular pericarditis, pain, palpitation, some fever, friction sounds, dyspnoea and the signs of effusion. In most cases there are some of the general symptoms of tuberculosis, as loss of weight; anaemia and the increase of general weakness. If the tubercular affection be more acute there may be irregular fluctuations of temperature and profuse perspiration. In the majority of cases the course is chronic and other manifestations of tuberculosis usually suffice to reveal the nature of the pericarditis. Large amount of effusion is exceptional but if so great as to require aspiration and the fluid proves hemorrhagic, strong evidence of the tuberculous nature of the infection is afforded. The two layers of the pericardium become thickened and adherent if there is no effusion and may contain tubercles or caseous masses between the layers. The symptoms and signs will be the same as adherent pericarditis.

Diagnosis:—Neither the symptoms nor the course of the disease are sufficient to confirm the tuberculous nature of the affection, but the signs of tubercular disease in other organs and structures especially the serous membranes make the existence of a similar infection of the pericardium very probable.

Prognosis:—If the symptoms are so marked that the conditions are readily recognized the outlook is not good, most cases ending rapidly either directly from the pericardial affection, from co-existing diseases in other organs or from general tuberculosis.

In the absence of serious affections of other organs tubercular pericarditis usually runs a chronic course. Death usually is

due to general tuberculous disease or to cardiac failure. If adhesion of the pericardial surfaces takes place a cure results as far as the pericarditis is concerned, but cardiac failure will soon take place. The appearance of tuberculous pericardial effusion in a tuberculous subject generally hastens the fatal ending.

Treatment:—The treatment of tubercular pericarditis is the same as in other cases of pericarditis. If the fluid is abundant and causes great distress it must be removed but it usually rapidly accumulates again. Each case must receive treatment for the conditions that arise.

The following case is one that I have met with recently and although no post-mortem examination could be obtained it undoubtedly was a case of tubercular pericarditis.

I was called to see M. C., male, Sept. 5th, 1909. He had been under the care of another physician about three weeks previously to my seeing him. This physician made the diagnosis of pneumonia at the base of the left lung and treated him for it. Just before I saw him the patient developed a profuse diarrhoea which appeared to be beyond control and the family and patient himself were informed that the case was one of consumption of the bowels and that it would soon terminate in death. The patient was a stable man and had worked up to the first of August, but for a month previously had steadily lost both weight and strength, although the appetite remained in a fair condition during this time. He began to get out of breath on exertion so that he had to sit down two or three times in walking a block, and also had to stop and rest in climbing a flight of stairs. He developed a slight cough with a constantly increasing weakness. When I

saw him he was very anaemic and emaciated and he had to sit propped up in bed as he was much more comfortable sitting up than lying down. Temperature between 101 and 102, with a pulse rate of 160. The pulse at the wrist was very feeble being soft and easily compressible, and it was difficult to count it.

On physical examination I found five crepitant rales over the back at the base of the left lung. They resembled the friction rale of pleurisy rather than the rales heard either in bronchitis or pneumonia. There was a slight cough and scanty expectoration which upon examination showed a few tubercular bacilli. The heart sounds were muffled, in fact were hardly perceptible. The impulse of the heart was located on a level but to the right of the nipple. There was decided flatness over the region of the heart extending from a line about two inches beyond the left nipple forward to just past the centre of the sternum to the right.

There was a disinclination to take food partly on account of the distress caused in the stomach and also because it was generally followed by severe watery stools which greatly exhausted the patient. The tongue was moist, but quite heavily coated, while the breath was quite fetid. There was considerable tenderness over the region of the liver with some enlargement of that organ. There was quite a little flatulence and the later examination of the feces showed tubercular bacilli in considerable numbers.

Under the use of large doses of bismuth combined with codeine the bowels gradually came under control, the tongue gradually became clean and there was less distress after eating and the appetite im-

proved. Heart stimulants combined with small doses of potass. iodide had a good result and conditions became better. The area of flatness gradually diminished and the sounds of the heart could be heard more plainly and a friction sound could be distinguished with each beat of the heart. The impulse of the heart could now be felt in its normal position about an inch below and to the right of the nipple. The pulse rate dropped to about a hundred to the minute, but still the pulse remained hardly perceptible at the wrist and could only be counted with difficulty. The effusion into the pericardium was evidently absorbed but probably owing to an exudate being formed the heart did not recover its tone. However the patient was able to lie down with comfort and began to walk to a chair and even occasionally across the room. The appetite improved and the cough disappeared and the patient was much more cheerful, but there was no apparent increase in weight. This condition of improvement continued until about the middle of November when the symptoms of cardiac failure again appeared. The bowels also became loose every few days and it was only with difficulty that they could be controlled, while the appetite failed. First the ankles became swollen, then the lower limbs, and finally the abdomen became oedematous. The dyspnoea returned and the patient passed most of his time sitting in a chair with his feet elevated on a box as he could not lie down. He gradually grew weaker and died of cardiac failure Jan. 11th, 1910, having been under my care about four months.

This was undoubtedly a case of tubercular pericarditis but I could only make a diagnosis from the fact that general tu-

berculosis of other organs was present. If an autopsy could have been obtained it probably would have shown some very interesting conditions.

144 E. 74th St., N. Y.

PERITONSILLAR ABSCESS WITH DESCRIPTION OF A NEW IN- STRUMENT FOR OPENING AND IRRIGATING THE ABSCESS CAVITY.¹

BY

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A peritonsillar abscess is an accumulation of pus in the region of the tonsil, usually in close proximity to the supratonsillar fossa. This pus collection may be large or small and is surrounded by a zone of inflammatory tissue which may involve the soft palate and pharyngeal wall. Rarely the abscess is behind the tonsil¹ simulating a retropharyngeal abscess. Less frequently the pus burrows beneath the tonsil so that the gland is pushed inward and upward.

The usual etiological factors for acute tonsillitis are responsible for peritonsillar abscess. In fact the majority of cases are the sequellae of tonsillar infection. The invading organism as a rule, is the streptococcus pyogenes aureus.

The pathological picture presented in a well selected case can hardly be mistaken for anything else. There is an area of intense redness or hyperemia which is limited more or less by the dense connective tissue of the soft palate, particularly in the region of the uvula. The vast

quantity of lymphatics situated in the velum and tonsillar region, tends to make the spread of infection an easy matter. There is rapid infiltration of the surrounding connective tissue with embryonal cells and considerable edema arises by the blocking up of the intercellular spaces with leucocytes and embryonic cells. At times an area of necrosis may be seen at a central point which indicates the seat of the abscess proper.² Coakley³ claims that in 90% of the cases the pus has a tendency to burrow in an upward direction. In the remaining cases pus passes down in the posterior pillar of the fauces on to the lateral wall of the oropharynx.

In my experience and that of others, the relation of the supratonsillar fossa to the tonsil proper and to the soft palate has a great deal to do with abscess formation in this region after amygdalar infection. This fossa is triangular in shape with its apex at the lateral wall of the pharynx. Its anterior and posterior walls are formed by the respective pillars of the fauces. Its inferior surface is the capsule of the tonsil; its superior surface corresponds to the amalgamation of the two pillars into the velum. This triangular space is filled in with loose connective tissue interposed between the meshes of which are numerous connective tissue cells. Moreover the upper portion of the tonsil contains more crypts than the lower portion, the majority of which open directly into the oval cavity but many of which enter into the supratonsillar fossa or near it.

When an infection of the tonsil takes place, as in acute tonsillitis, particularly if there have been attacks before and the tonsil is pathologically altered, the pus can readily find its way into the deeper portions of the crypts and if these should

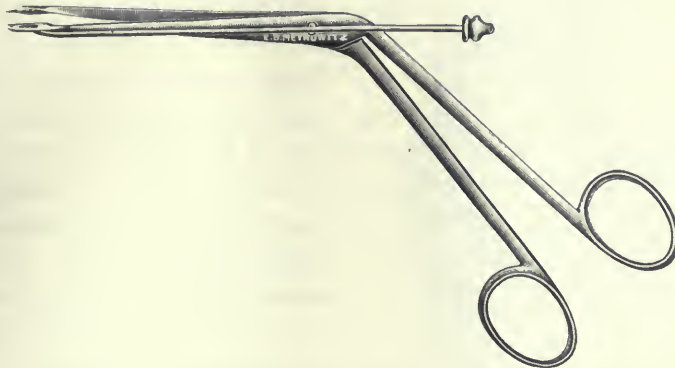
¹Read before the Hunterian Medical Society, Oct. 10th, 1910.

communicate with crypts which open into the supratonsillar fossa, an abscess in that locality is very likely to occur.

The symptoms resulting from a peritonsillar abscess are usually so well marked that one can often recognize the condition from the facies of the patient. There is an agonized drawn expression to the face, the lower jaw is set, the lips are slightly opened allowing the dribble of a thick saliva. The speech is muffled and thick and the patient invariably has a slight "indrawn" cough—as if he were afraid to cough up the thickened mucus in the mouth. Examination of the throat

Diphtheria will be revealed by culture and specific disease by the lack of the usual inflammation.

The treatment of peritonsillar abscess is mainly surgical. Abortive measures may be used before pus has formed. But as the diagnosis is seldom made before pus formation, it is seldom that this accomplishes a direct result. If there is intense redness in the region of the supratonsillar fossa, some good may be done by applying strong solutions of silver nitrate. I was called in to see such a case a short time ago. The tonsil and velum on the left side showed inflammatory signs. The patient



Author's Peritonsillar Incisor and Irrigating Forceps.

shows the intense red, indurated, bulging soft palate. Systemic symptoms of fever are present.

With all the simplicity of diagnosis, one is surprised to hear that cases have been diagnosed as peritonsillar abscess which have proved to be cases of aneurism, malignant disease of the fauces, diphtheria and syphilis. In a case of aneurism a bistoury was plunged into the tumor, the hemorrhage only ceasing on dilation of the carotid.⁴ In this case palpation had previously detected pulsation which should have been a warning. Malignant disease should be readily recognized by the history of the case and the presence of ulceration.

had slight fever and intense pain on swallowing. After cocainizing the parts, I applied a solution of 50% silver nitrate solution to the supratonsillar fossa, which was very deep. The patient was relieved and had no more trouble with his throat.

Other abortive measures consist in free catharsis, the administration of diaphoretics, cold applications to the neck, antiseptics to the throat, etc.

The usual operative treatment is to plunge a bistoury into the abscess cavity and let out the pus. Such a slight operation is fairly easy to perform but excruciatingly painful to the patient. The slightest touch of the knife has sent a patient into

a dead faint.⁵ When the abscess is "pointing" it is a simple matter to incise at this part. However, when there is no special point of demarkation it is well to follow some definite rule for the point of incision so as not to injure the internal maxillary or some other large artery. According to St. Clair Thompson the site of election can be readily reached as follows: If an imaginary line is drawn across the base of the uvula and another along the anterior faucial pillar, they will intersect at a point



Peritonsillar Abscess. Note that the incision is curvilinear from above downward and outward.

overlying the supratonsillar fossa. Just external to this is the best point for opening the abscess. Coakley⁶ believes in making a vertical incision so as not to cut across the blood vessels. We have been in the habit of making a slightly diagonal incision which starts at a point just external to the anterior pillar and traversing the soft palate toward the uvula. Wrapping the blade in cotton is unnecessary if one has any proper sense of touch but the depth of the incision should be entirely gauged by the feeling of space in front of the knife point. Moreover such an operation should

only be performed under good illumination so that when pus appears it can immediately be seen. As soon as the knife has penetrated deeply enough the rest of the incision should be made from within outward.

The chief danger from such an operation is hemorrhage. Newcomb⁷ reports a number of cases of hemorrhage from the throat, among which were cases of profuse bleeding after incision for peritonsillar abscess. In one arteriosclerotic individual, the hemorrhage lasted for so long a time that it was necessary to ligate the common carotid artery. Chappell⁸ reports another case. The cause of the hemorrhage is seldom due to the penetration of a blood vessel by the knife but to an erosion of the vessel wall within the abscess cavity. Such a hemorrhage may take place even if the abscess opens spontaneously.

Oftentimes after incising the abscess and stretching the opening with forceps, the cavity refills. Placing a strip of gauze into the opening, or rubber tissue or rubber tubing, may in some measure make the opening more or less permanent. As a rule such foreign matter is expelled by the action of the palatal muscles and the lips of the incision stick together. If such an occurrence arises, one must immediately dilate the incision and hope that this second dilatation will let out all the pus.

I have operated on a number of cases in this way. But it has always seemed to me that the psychological influence of the knife together with its dangers in working in a deep cavity was more or less barbarous and that better results could be accomplished by other means. Opening the abscess with a very sharp pointed nasal dressing forceps has been described by Thompson⁹. The forceps are pushed into

the brawny tissue, with a slight inclination outward in order to reach the pus. As the forceps are withdrawn, the blades are opened so as to produce a vertical slit. Naturally such an incision has the same tendency to close as one made by the knife.

Black¹⁰ and others have considered it good policy to wash out the abscess cavity with peroxide or other antiseptic solution after the primary incision has been made. When it is possible to do this, the procedure is an excellent one for the cavity becomes distended with the solution and the deeper recesses are readily reached. After such irrigation, there is far less tendency to immediate recurrence.

Ignorant of the work of Thompson and Black, I came to the same conclusion and for this purpose devised an irrigating forceps which meets the requirements of most cases. The instrument was first intended for the irrigation of the tonsillar crypts and was thus described in the *American Journal of Surgery*, June, 1910. The instrument (see cut) is the same as a long nasal dressing forceps with the tips of the blades very sharply pointed. Along the lower blade runs a small cannula with a bulbous tip over which fits rubber tubing to connect with an eight ounce piston syringe. The inner end of the cannula is continued through the lower blade in such a manner that the irrigating fluid is sent in the direction of the lower blade with quite some force. Any mild alkaline solution may be used, such as salt water, boric acid solution, argyrol 1%, peroxide 25%, etc. The velum and surrounding parts are anesthetized with 20% cocain, by means of spraying and applications. It is almost impossible to make this area insensitive so that too much time should

not be wasted. The operation is best performed in the upright or semi-upright position in adults but in children the prone position is better with the head well extended. The closed forceps is plunged into the brawny tissues until one feels that he is in a cavity and then the blades should be opened about a quarter of an inch. All the pus that will come away by itself should be allowed to do so and then the irrigation (the syringe being worked by an assistant) should be begun and continued until the fluid returns clear.

The patient is immediately relieved by this operation and, as a rule, a second opening is unnecessary. Packing the cavity is also needless. The subsequent treatment consists in applying ice cloths or the ice coil to the neck, sucking on cracked ice and giving the patient one of the newer antiseptic gargle tablets to suck on every hour.

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2. Kyle. Diseases of the Nose and Throat.
3. Coakley. Diseases of the Nose and Throat.
4. Knight and Bryant.
5. Colorado Medicine, August, 1910.
6. Coakley. Diseases of the Nose and Throat.
7. The Laryngoscope, June, 1908.
8. Trans. of Am. Laryngological Assoc., 1900.
9. Colorado Medicine, August, 1910.
10. Ibid.

11 West 91st Street.

SURGICAL HINTS.

The passage of a sound or catheter into a tortuous or narrowed urethra is facilitated by injecting the urethra full of sterilized olive oil.

Overdistention of the bladder due to neurasthenia, hysteria, shock or prolonged voluntary retention may be overcome by administering a rectal enema consisting of a pint of warm water and an ounce of glycerin.—*Am. Jour. of Surgery*.

CORRESPONDENCE.

THE DIFFERENCE BETWEEN A
SANITARIUM AND A SANATORIUM.

Editor *American Medicine*.—

In the October issue of your esteemed journal you quote from the *Literary Digest* a definition of the two words sanitarium and sanatorium. This definition corresponds in the whole with my own which is given in my book, "*Medical Greek*," but it is less complete. Will you permit me to recapitulate the essential points which I have written on the subject?

Neither of the two words in question is classical Latin, sanatorium not existing at all in that language, while *sanitaring*, *sanitaria*, *sanitarius* has the adjectival meaning of sanitary. There exists a verb *sanare*, to heal, and sanatorium can be formed to mean a tool or a place for healing, while sanitarium only means a "sanitary" or hygienic tool, food or place. Sanitarium is therefore more suggestive of passive healing (*sanitas*, *sanitatis*, health), taking care of a person and aiding nature in its work; while sanatorium implies aggressiveness, as though defying nature and healing by force. The *Literary Digest* mentions the late Latin *sanatorius* as meaning *health giving* but this word I do not know; there exists, however, *sanatio* the healing from *sanare*. Preferable to either sanatorium or sanitarium would be (as meaning health resort) the Latin *Valedudinarium* and the Greek *Hygiasterion* concerning the correctness and distinctness of which two words there exists no doubt.

Permit me also Mr. Editor, at this occasion, to demonstrate by an example how much better in some instances we can express ourselves when we borrow from the Greek instead of from the Latin. Hospital from *hospitalis*, *e* or *hospicium* is well

understood as meaning a place where the sick are treated, but etymologically it is indistinct. The Greeks have a much better word, namely, *nosokomeion*, which permits beautiful combinations. *Nosos*, the sickness, *komeo*, to take care of, *nosokomeo* to take care of sick, *nosokomeion* an institution for the care of sick, *nosokomos* a nurse, *nos komia*, the care given to the sick. Again there are combinations of the verb *komeo* which are very useful. *Brephos*, an infant, *brephokomeo* taking care of infants, *brephokomeion*, an infant asylum, thus are formed other combinations like *gerontokomeion*, or *gerokomeion*, asylum for old aged, *phrenokomeion*, an insane asylum.

A. ROSE.

SOME BOOKS OF THE YEAR.

This list by no means includes all of the medical books published during the year, but simply gives with few omissions the more important of those received for review.

Abdominal Operations, After Results of on the Pelvic Organs. Based on a series of 1,000 consecutive cases. By Arthur E. Giles, M. D. Published by Bailliere, Tindall and Cox, London, W. C., England.

Active Principles, A Compend of the. With Symptomatic Indications for their Therapeutic use. By Harold Hamilton Redfield, A. B., M. D. Published by the Clinic Publishing Co., Chicago, Ill.

Colds, The Cause and Cure of. By William S. Sadler, Illustrated. Published by A. C. McClurg & Co., Chicago, Ill.

Disease, The Treatment of. A Manual of Practical Medicine. By Reynold Webb Wilcox, M. D. Third Edition, thoroughly revised and enlarged. Published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, Pa. Price \$7.50 net.

Electro-Therapeutics, Hand-Book of. By William James Dugan, M. D., with ninety-one illustrations. Published by F. A. Davis & Co., Philadelphia, Pa. Net price \$2.00.

Eye, Lessons on the. For the use of Undergraduate Students. By Frank L. Henderson, M. D. Fourth Edition revised. Published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, Pa. Price \$1.50 net.

Eye, Refraction and Motility of the. Designed for Students and Practitioners. By Ellice M. Alger, M. D. Published by F. A. Davis & Co., Philadelphia, Pa. Price \$1.50.

Genesis.—A Manual for the Instruction of Children in Matters Sexual. By B. S. Talmey, M. D. With Nineteen Cuts, Forty-seven Drawings in the Text. Published by the Practitioner's Publishing Co., 12 W. 123rd St., New York, N. Y. Price \$1.50.

Harvey Lectures, The. Delivered under the Auspices of the Harvey Society of New York. 1908-09. Published by J. B. Lippincott Co., Philadelphia, Pa. Cloth, \$2.50 net per volume.

Hip Joint, Congenital Dislocation of the. By J. Jackson Clarke. Published by Bailliere, Tindall & Cox, London, Eng. Price \$1.50 net.

Hookworm Disease. Etiology, Pathology, Diagnosis, Prognosis, Prophylaxis and Treatment. By George Dock, A. M., M. D., and Charles C. Bass, M. D. Illustrated with forty-nine special engravings and colored plates. Published by C. V. Mosby Co., St. Louis, Mo.

Hygiene and Morality.—A Manual for Nurses and Others, giving an outline of the medical, social and legal aspects of the Venereal Diseases. By Lavinia L. Dock, R. N. Published by G. P. Putnam's Sons, 27 West 23rd St., New York, N. Y. Net Price \$1.25.

Hygiene, Text-Book of. By George H. Rohe, M. D., and Albert Robin, M. D. Fourth revised and enlarged edition; with many illustrations and valuable tables. Published by F. A. Davis & Co., Philadelphia, Pa.

Hypnotism and Treatment by Suggestion. By J. Milne Bramwell, M. B., C. M. 12 mo. cloth, 216 pages. \$1.75 net; postpaid \$1.85. Funk & Wagnalls Company, New York and London.

Hydrotherapy, Practical. By Curran Pope, M. D. Published by Cincinnati Medical Book Co., Cincinnati, O.

Infancy and Childhood, Diseases of. Their dietetic, hygienic and medical treatment. By Louis Fischer, M. D. Third Edition, with three hundred and three illustrations. Published by F. A. Davis & Co., Philadelphia, Pa. Price, cloth \$6.50.

International Clinics. A Quarterly of illustrated clinical lectures and especially prepared original articles. By leading members of the medical profession throughout the world. Volume I. Twentieth Series, 1910. Published by J. B. Lippincott Company, Philadelphia, Pa.

International Clinics. A Quarterly of illustrated clinical lectures and especially prepared original articles. By leading members of the medical profession throughout the world. Volume II. Twentieth Series, 1910. Published by J. B. Lippincott Company, Philadelphia, Pa.

International Clinics. A Quarterly of illustrated clinical lectures and especially prepared original articles. By leading members of the

medical profession throughout the world. Volume IV. Twentieth Series, 1910. Published by J. B. Lippincott Company, Philadelphia, Pa.

Iowa Institutions, Bulletin of. Published quarterly. Volume XI, 1909.

Laboratory Diagnosis, Essentials of. Designed for Students and Practitioners. By Francis Ashley Faught, M. D. Second Revised Edition. Published by F. A. Davis & Co., Philadelphia, Pa. Price \$2.00 net.

Light Therapeutics. A Practical Manual of Phototherapy for the Student and the Practitioner. With special reference to the Incandescent Electric Light Bath. By J. H. Kellogg, M. D. Published by the Good Health Publishing Co., Battle Creek, Mich.

Medicine and Dentistry, Electric Currents in. By S. H. Monell, M. D. Published by W. R. Jenkins Co., 851 Sixth Avenue, New York, N. Y. Price \$4.00 net.

Nephrocoloptosis. A description of the Nephrocolic Ligament and its action in the causation of Nephroptosis; with the technic of the operation of Nephrocolopexy, in which the Nephrocolic Ligament is utilized to immobilize both Kidney and Bowel. By H. W. Longyear, M. D. With Eighty-eight special illustrations and a colored frontispiece. Published by C. V. Mosby Co., St. Louis, Mo.

Neurasthenic, Confessions of a. By William Taylor Marrs, M. D. Illustrated with Original and Appropriate Drawings. Published in a neat 12mo Volume of 115 pages. Bound in extra cloth. Price \$1.00 net. Published by F. A. Davis Co., Philadelphia, Pa.

Nose, Mouth, Pharynx and Larynx, The Diseases of the. A Text-book for students and practitioners of medicine. By Alfred Bruck, M. D. (Berlin). Illustrated by 217 figures and diagrams in the text, many of which are in colors. Published by Rebman Co., 1123 Broadway, New York. Price \$5.00.

Obstetrics, Hand-Book of. By R. Cadwallader, A. M., M. D. With 104 illustrations in the text. Published by F. A. Davis & Co., Philadelphia, Pa.

Obstetrics, Practical. By Egbert H. Grandin, A. B., M. D., with the collaboration of George W. Jarman, M. D., and Simon Marx, M. D. Fourth Edition, revised and enlarged. Illustrated with forty-seven full-page photographic plates and one hundred and sixteen illustrations in the text. Published by F. A. Davis & Co., Philadelphia, Pa.

Pharmacy, Chronicles of. By A. C. Wootton. Volume I. Published by Macmillan Company, 66 Fifth Ave., New York, N. Y. Price \$6.50 net.

Pharmacy, Chronicles of. By A. C. Wootton. Volume II. Published by Macmillan Company, 66 Fifth Ave., New York, N. Y. Price \$6.50 net.

Psychic. By Dr. Max Talmey. Price \$2.50. Published by the Medico-Legal Publishing Co., 55 West 126th St., New York, N. Y.

Psychology, The New. Its basic principles and practical formulas. By A. A. Lindsay, M. D. Published by Eugene & Arthur Lindsay, Publishers, Portland, Ore. Price in cloth \$1.25, fine leather embossed \$2.00.

Religio-Medical Masquerade, The. A complete exposure of Christian Science. By Frederick W. Peabody, LL. B., of the Boston Bar. Published by the Hancock Press, Boston, Mass. Price \$1.00.

Science of Living, The, or the Art of Keeping Well. By William S. Sadler, M. D. Illustrated. Published by A. C. McClurg & Co., Chicago, Ill. Price \$1.50 net.

Semicircular Canals, Physiology and Pathology of the. By A. E. Ibershoff, M. D., and a foreword by R. S. Copeland, M. D. 12mo cloth with 8 illustrations. Published by Paul B. Hoeber, 69 East 59th Street, New York, N. Y. Price \$1.00 net.

Sexual Disabilities of Man, The and their treatment. By Arthur Cooper, M. D. Second Edition revised and enlarged. Published by Paul B. Hoeber, 69 East 59th St., New York, N. Y. Price \$2.00 net.

Sexual Diseases, The Prevention of. By Victor C. Veeki, with introduction by William J. Robinson, M. D. Published by the Critic & Guide Co., 12 Mt. Morris Park, W., New York, N. Y.

Sexual Life of Woman, The. In its Physiological, Pathological and Hygienic aspects. By E. Heinrich Kisch, M. D. With 97 illustrations in the text. Published by Rebmam Co., 1123 Broadway, New York. Price \$5.00.

State Board Examination. Questions and Answers of forty-one states and two Canadian provinces. A Practical Work, giving authentic questions and authoritative answers that will prove helpful in passing state board examinations. Reprinted from the Medical Record. Third Edition. Revised and greatly enlarged. Published by William Wood & Co., 51 Fifth Avenue, New York, N. Y. Price \$3.00 net.

Stomach and Upper Alimentary Tract, Diseases of the. By Antony Bassler, M. D. Copiously illustrated with numerous half-tone and line text-engravings and 56 full page half-tone plates (with nearly 100 figures). Plain and in colors, from original photographs and drawings. Published by F. A. Davis & Co., Philadelphia, Pa. Price \$6.00.

Surgeon-General of the Public Health and Marine-Hospital Service of the United States, Annual Report of the. For the year 1909. Government Printing Office, Washington, D. C.

Surgery, Ionic—In the Treatment of Cancer. By G. Betton Massey, M. D. Published by the A. L. Chatterton Co., New York, N. Y.

Symptoms, An Index of. By Ralph W. Leftwich, M. D. Fourth Edition. Published by William Wood & Co., 51 Fifth Ave., New York, N. Y. Price \$2.25 net.

Tales, Never-Told. By William J. Robinson, M. D. Third Edition. Published by the Altruists, 12 Mt. Morris Park, W., New York, N. Y. Price \$1.00.

Thirty-third Annual Report of the Board of Health of N. J. 1909. Report of the Bureau of Vital Statistics. Published by the New Printing Co., State Printers, Paterson, N. J.

Twenty-fifth Annual Report of the Bureau of Animal Industry. U. S. Department of Agriculture. For the year 1908. Government Printing Office, Washington, D. C.

Vaccine Therapy—Its Theory and Practice. By R. W. Allen, M. D., B. S. (Lond.) Third Edition. Published by P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, Pa. Price \$2.00 net.

Women, Diagnosis and Treatment of Diseases of. By Harry S. Crossen, M. D. Second Edition, Revised and Enlarged. With seven hundred and forty-four engravings. Published by C. V. Mosby Co., St. Louis, Mo.

SPECIAL THERAPEUTIC ARTICLE.

SOME RESULTS OBTAINED WITH INTRA-VENOUS MEDICATION.

BY

JOSEPH F. SOMES, M. D.,
Vincennes, Ind.

By way of introduction I will say that this is the first time I have had occasion to write an article of this character and only because the stimulus was so absolutely out of the ordinary, have I done so. Allow me further to say that it is not my intention this should be considered other than a purely preliminary statement, as the value of this method like many others, can only be proved by lapse of time; but I feel, notwithstanding, that the noticeable improvement in my results, and the very pronounced effect invariably produced on patients thus treated, make this a subject worthy of careful consideration, especially as so little as yet is known about it.

My attention was called to this form of intra-venous medication early in May, 1910. A patient suffering with tuberculosis secured a physician from Chicago to

give this treatment and as I was the attending physician, I came in contact with a remedy and method which was new to me. (There is little to be said here regarding the remedy and method of administration other than that the solution* used is one devised by Mr. William Bannerman of Chicago). I studied the technique and by noting the progress made in this case, saw the possibilities of this treatment. It is only fair to state that the improvement made was only temporary, the patient being in the third stage of the disease. However, the immediate effects of the treatment proved so encouraging that I decided to try it on a more favorable case. The results were still more encouraging and since then I have followed it carefully and used it, not only in cases in which I thought it might be of some value, but, as will be explained later, in several in which I feared it would be of little if any help.

I confess that at times, owing to my inexperience with this method and the dearth of clinical data on the subject, I have given this treatment rather empirically. Later, however, the results obtained have given me confidence, abolished this feeling of empiricism and convinced me that the treatment must be scientific, because it does the work. Therefore, I do not feel that I am passing beyond the bounds of medical ethics by having used a proprietary remedy which has given me results such as those to which I shall call attention.

Since last May I have given some 250 intra-venous injections of this solution to sixty-nine individuals. The results in four of these cases should be considered absolutely negative—one patient is dead and three others are in the last stages of pulmonary tuberculosis, evidently beyond all

hope. With the remaining sixty-five there are two indifferent results, fourteen still under treatment and the rest—forty-nine—are apparently cured.

The conditions treated varied from pulmonary and other forms of tuberculosis to Bright's disease and rheumatism, including a number of other intractable conditions, most of which had "gone the rounds" and were considered practically hopeless. My office soon became a court of last resort; and only because of the pleadings of some and the pressure brought to bear on me by acquaintances of those whom I had previously helped, would I consent to go against my judgment and make the attempt. Nevertheless I did, and not a few patients who seemed beyond hope, responded splendidly.

Such being the case, it is not out of place to believe that a record of several cases treated by this method might be of some assistance to those into whose hands it may happen to fall. From my records I quote a number of cases and I have taken particular pains to enumerate here both the successes and failures.

1. Mrs. M., age 53 years. Suffered from chronic sciatica and lumbago for nearly twelve years. Two injections were given—May 8th and 16th—with no further treatment. So far as is possible for an ordinary individual to suppose, this woman is well. All of the inconvenience suffered for years by this patient has disappeared; she is doing her daily work; has made a trip to Pennsylvania and back and considers herself cured.

2. Mr. E. F., age 32 years. Came suffering with a pleural abscess of the left side which followed a severe attack of pleuro-pneumonia in October, 1909. The patient knew that an operation was indicated but was loath to undergo it and wanted to try this first. He received in all, five injections, given May 25th, June 1st, 7th, 14th and 21st. Symptomatically and from the standpoint of the physical diagnosis, the recovery has been complete. No surgical intervention was required. The abscess ruptured and evacuation of its contents by mouth followed shortly after the first injection and the progress was rapid and satisfactory.

3. Mr. J. B., age 27 years. Pulmonary tuberculosis complicated with slight laryngitis. All the classic symptoms were thoroughly in evi-

*The formula is supplied to physicians.

dence and the patient was supposed to be in the third stage of consumption. Treatments were administered May 28th, June 4th, 11th, 18th and 25th. The symptoms have all disappeared; patient has gained in weight and is at work, and considers himself cured.

4. Mr. B. S., age 42 years. This gentleman, a successful business man, for several years had been suffering from a sinus from one of the metatarso-phalangeal joints of the left foot; that the disease was tuberculous was demonstrated by a former operation in Evansville, Ind., and the microscopic demonstration of the presence of tubercle bacilli. After the operation the sinus closed only to reopen again a second time some months later. At the time of treatment the sinus had been open 14 months. Treatment was administered June 2nd, 7th, 16th and July 1st. Within 4 weeks the sinus was closed, with no recourse to other local or general treatment. The patient is using his foot in his business (that of store manager) with no difficulty.

5. Miss C. K., age 23 years. Came with a moderate cough, evident bronchitis, anemia and afternoon temperature. History of pleurisy with adhesions, one year ago. There was little sputum and no microscopic examination was made. Injections were given July 2nd, 9th, 16th. The patient gained 8 pounds in three weeks; is doing her regular work every day and considers herself cured.

6. Mrs. J., age 61 years. For years this lady had been suffering from what evidently was chronic interstitial nephritis. The albumen content of the urine was 2.5%. The first symptoms were noticed 4 years ago and had since become progressively worse. On presentation, there was a decided puffiness under the eyes; the feet and legs were swollen; the patient suffered from dizziness and other characteristic symptoms of this condition. Six injections were given, on June 11th, 18th, 25th and July 8th and 20th. With each analysis the urine grew progressively better and soon was absolutely free from albumen (nitric acid layer test used) and has now been absolutely free from albumen for several months. The patient considers herself cured; is doing the house work on a farm and is naturally much encouraged.

7. Mr. J. R., age 33 years. Pulmonary tuberculosis; two hemorrhages before treatment began. Injections were given July 1st, 7th, 14th, 21st and 28th. The patient did not improve under this treatment and at the present writing is not expected to live.

8. Mrs. S., age 61 years. For years had suffered with chronic articular rheumatism involving the knees and ankles as well as the fingers and wrists. This patient received treatments July 9th, 13th, 19th, 25th and August 3rd. Soon after treatment was begun, a noticeable mobility of the affected parts was secured. The patient made all efforts to exercise these joints and now they are not only free from pain but thoroughly serviceable and the patient is well.

9. Mrs. A., age 29 years. Pulmonary tuberculosis with cavity and 5 severe hemorrhages before coming for treatment in July. Treat-

ment was administered July 10th, 15th, 21st, 28th and Aug. 4th. Results negative.

10. Mrs. S., age 28 years. Chronic tuberculous lymphadenitis. The glands were noticeably swollen and soft, but were not ruptured. Patient treated June 11th, 17th and 21st and July 2nd, with a resulting complete disappearance of the glands and a marked increase in weight and general health.

11. Mr. G. K., age 30 years. Suffered from articular rheumatism of 2 years duration which seemed to be confined to both ankles. On July 18th and 25th he received injections with a resultant absolute cure.

12. Mrs. S. J., age 37 years. Pulmonary tuberculosis; 2 hemorrhages previous to the first visit to my office. She received treatments July 19th, 25th and August 8th and 15th. The patient is evidently much better. She manifests marked increase in weight and general health; all the classic symptoms have disappeared; she is doing her work in her home and is apparently cured.

13. Mr. J. M., age 65 years. Carpenter. Came suffering with a very severe sciatic rheumatism which had grown progressively worse since its inception 12 years before. The patient seemed evidently a bad subject, but since he had come quite a long distance for treatment he would not be refused and injections were given June 14th, 19th and 26th. The old gentleman straightened up; his pain disappeared; mobility gradually returned; his crutches were dispensed with and at the present writing, he is back again at his carpenter work.

14. B. F. M., age 41. Severe lumbago affecting the left side and complicated at times, with sciatic neuritis. This condition had bothered this gentleman off and on for 2 years. At the time of treatment he could not lift up his foot to tie his shoe. Injections given Sept. 10th, 17th and 24th. The patient has had no trouble since and has hauled 1,200 bushels of corn to market.

15. Miss T. K., age 37. An "incurable." The patient suffered 14 years with complications of indefinite troubles prominent among which were neurasthenia with periodic headaches, anemia and severe and frequent attacks of indigestion. The headaches were growing progressively more frequent and severe requiring hypodermic injections of morphine to control them. At earnest solicitation and "as a last resort" injections were given weekly from June 14th to August 3rd with a resulting complete cessation of the headaches (the patient not using morphine since the first injection); marked improvement in the general health; weight increased 7 lbs. (the patient is a slight woman) and the patient declares she is well and "can eat anything now."

16. Mrs. L. M., age 32. Cardiac dilatation with severe asthma. Patient absolutely unable to lie down and sleep for 9 weeks previous to presenting herself at my office. So far, 3 injections have been given: On Sept. 29th, Oct. 11th and 20th. After the first injection the patient experienced marked relief; was able to lie down without distress and has done so since at

her pleasure, without any inconvenience. Her general condition seems to be improving and she has gained five pounds in weight. Still under observation.

Without going into further details and relating more cases, I feel justified in saying that during the six months I have been acquainted with this treatment, my belief in medicine has been materially increased and I have secured results which, to the casual observer, are absolutely phenomenal. If it were not that the fact, that the patients referred to above and quite a number of others, are alive to tell the tale of the change in their condition that at one time was considered hopeless, is so evident to all, I would be loath to commit myself as I have done.

The immediate results in tuberculosis have been encouraging. Of seventeen cases treated so far, four were not benefitted and should never have received this treatment; one is practically no better while the remaining twelve assure me that they are well and in need of no further treatment. This may, or may not be true—probably not; but that there is a marked change for the better is very apparent and the results thus far are very encouraging.

In regard to the dosage. I have given a great deal of study to this treatment and have to study each individual case. If the patient is very anemic and pale, I give a small dose to begin with, say 6oms. so as to prevent too much reaction later. Gradually increase to 9oms. In many cases I make a hemoglobin test before the injection. If this test shows 60% or above, I give 9oms. at the beginning and gauge the dose from 6oms. to 9oms. in subsequent treatment according to reaction and symptoms of each case.

I place the patient in a recumbent position, and during the injection the patient

will taste and smell the creosote, showing the medicine is circulating in the blood.

I favor elimination by keeping the kidneys and bowels active during treatment.

I have also, in addition to these intravenous injections, used an internal solution prepared by Mr. Bannerman, in three to ten drop doses three to four times a day and such other remedies as the exigencies of each case demanded.

To sum up: The intra-venous injection of Bannerman's solution has, in my hands, procured results which cannot to my knowledge, by any means be equalled.

LITERARY NOTES.

Medical Vademecum in German and English, by B. Lewis, with preface by Prof. Dr. A. Politzer, Vienna, B. Lewis; London, J. & A. Churchill; Leipsic and Stuttgart, K. F. Köhler; Philadelphia, P. Blakiston's Son & Co. First edition. Pp. xv-559. Price, \$5.00 net.

This is a collection of admirable clinical lectures on various pathological subjects by the younger teachers at the chief Vienna hospitals, care being taken to avoid as far as possible the subjective viewpoint. Each lecture is accompanied by an English translation, grammatically correct but sufficiently literal to enable a beginner in German to follow the original word by word. In addition, there are several dialogues with patients undergoing physical examination. A study of this work, which can well be undertaken by anyone who has had a year of German, will save intending students much time and money which they would otherwise spend in the necessarily slow acquirement of a medical German vocabulary through merely hearing lectures; it is not too much to say that the book is indispensable.

ble to such students as cannot spend more than a twelvemonth in the fatherland. It is more up-to-date than any dictionary and gives valuable hints and aids to the intelligent student that no dictionary, however complete, can supply. The idea of giving a selection of lectures in full as a supplement to the conversations was original and clever. We offer a suggestion that by the use of smaller type or by division into two volumes the work be issued in a size convenient for the pocket.

ETIOLOGY AND DIAGNOSIS.

Symptomatology and Diagnosis of Cancer of the Prostate.¹—Salinger first observes that in the case of enlargement of the prostate in elderly people it is always indispensable to bear in mind the possibility of malignant disease. In seeking an accurate history it is important to determine as nearly as possible the date of the commencement of nightly micturition, i. e., micturition, during the night. The most constant and reliable information is given by rectal examination in the discovery of a hard tumor or a part of one. In making an examination of this the points to be borne in mind are the hard, irregular, nodular surface, any lateral processes that may be present, and the presence or absence of isolated nodules lying near to the tumour. Pains on micturition, or at any time, "rheumatoid" pains, sciatica, and further, hæmaturia, spontaneous or after instrumental interference, are frequently absent in the commencing stages. The absence of these symptoms, therefore, must not be estimated too highly. Cachexia does not show as a rule; it is a later symptom; the notion that the growth is not a malignant one should never, under any circumstances, be assumed from its absence. The same may be said of remissions in the troubles attending micturition, improvement in the general condition, and increase in weight. In all cases of enlargement of the prostate in which Bottini's operation has been performed, the

cast-off fragments from the cauterization should be carefully collected and subjected to a searching microscopic examination. Whether Bottini's operation should be performed for purely diagnostic purposes is a question not yet settled. The extirpation of enlarged glands, although not at the time suspicious, especially those of the groin, may, after microscopical examination, permit of a diagnosis being formed. Of symptoms that may be useful for later examinations may be mentioned commencing incontinence without much retention, associated with disease of the central nervous system, and, further, detection by means of the cystoscope of the presence of a prostatic tumour behind the symphysis pubis.

The Diagnosis of Eczema.¹—The cause, characters, and diagnosis of eczema vary, says Prof. Gaucher, with the localities attacked.

Eczema of the genital organs in men is localized in the scrotum, the inguinal groove, penis, and the perinæum, extending sometimes to the anal region. The patients thus attacked suffer generally from diabetes or arthritis in its varied forms (gout, obesity, biliary or urinary affections, emphysema, etc.).

The characters vary. In the scrotum the skin, covered with vesicles, becomes moist and finally crusts, and squamæ coat the surface. The itching is very severe, and if the affection is not treated, the skin becomes lichenified.

On the penis, œdema of the prepuce is observed, due to the laxity of the tissues. In such cases the urine should be analysed for sugar.

Intertrigo of the inguino-scrotal groove may be confounded with eczema, but the inflammation being due to irritation of the teguments by accumulation of secretion, the itching is replaced by a burning sensation especially if fissures are present.

In women, the eczema is observed on the vulva, in the vagina, and frequently on the perinæum. Nine times out of ten, diabetes is the exciting cause.

Eczema of the anus is a very troublesome affection. The region is red, secreting

¹Med. Press and Circular, Dec. 7, 1910.

¹Med. Press and Circular, Oct. 26, 1910.

a viscous liquid, while fissures radiate from the edges of the anus. The itching is sometimes intolerable, preventing all sleep.

Eczema of the articular folds (elbow, axilla, popliteal, inguinal) is frequently accompanied with inflammation of the sweat glands, especially in the axilla, requiring incision.

Varicose eczema is frequent by reason of the dilated veins which contribute to its extension. It generally yields to rest.

Eczema of the palms of the hands and the soles of the feet is generally chronic. The skin becomes horny, and in winter fissures are frequently observed. It is extremely tenacious.

TREATMENT.

Pott's Disease.¹—The treatment of Pott's disease has made marked progress in the hands of Dr. Calot, the celebrated orthopædic surgeon, whose establishment at Berck-sur-Mer has been visited by surgeons from all parts of the world.

Dr. Calvé, one of his assistants, resumes the treatment of the above affection as applied by the distinguished professor. The treatment is naturally general and local. The former needs no development: tonics, cod liver oil, arsenic, iodides, etc.

The local treatment is of the greatest importance, and is addressed to the deformity and possible complications. The principles are the same, whether the seat of the disease is in the cervical, dorsal or lumbar regions, to suppress the effects of compression through the ulcerative process, to avoid the formation of a gibbosity, or to diminish and correct an already existing gibbosity. The only really efficacious means of suppressing the effects of compression is to place the patient for months in the horizontal position which relieved the vertebræ from all weight, and diminishes contraction.

To meet the second requirement (to prevent the formation of gibbosity from inflexion forwards of the vertebral column) hyperextension of the affected region should be practised, and this is effected by the employment of a plaster jacket. The confection of this apparatus is very simple. Bands of tarlatan, of five yards in length

and four inches in width, are impregnated with dry plaster and steeped in warm water at the moment of using. The body of the patient is wound round several times with these bands, after which he is suspended, the points of his feet alone touching the ground, by the aid of straps passing under his chin and the occiput, and drawn up tight by means of a pulley fixed in the ceiling. By this suspension perfect hyperextension of the rachis is obtained.

The plaster jacket should meet the requirements of the region. For the lumbar region it should be moulded on the pelvis and reach to the axillæ. It should maintain the lumbar vertebræ in forced lordosis.

Where the disease is situate in the dorsal region, the jacket should mount to the cervical portion forming a collar, while if the lesion be above the sixth cervical vertebrae, or sub-occipital Pott's disease, the head must be kept in hyperextension by a deep collar moulded on the shoulders and reaching half way down the thorax.

The plaster jacket should be renewed every three months, to clean the skin, and correct, if necessary, the attitude. An opening, or window, is made over the seat of the threatened gibbosity, and the space filled with layers of cotton wool, which, by their compression, tend to force the rachis forwards, while a large opening is made in front to give free play to the chest walls, and to relieve the epigastric region of any pressure.

To limit and correct a pre-existent gibbosity, curves of hyperextension above and below the gibbosity, styled compensating curves, should be obtained by renewing the jacket every two months.

If an abscess forms it should not be opened with a bistoury, but tapped with an aspirator, and through the cannula left *in situ* a modifying liquid injected (iodoform in ether, olive oil, with guaiacol and iodoform, etc.).

The cannula of the aspirator should be passed first through the healthy skin before reaching the abscess proper occlusion.

The patient should be kept in the horizontal position for at least two years. At the end of that period he might be allowed to sit up in bed for an hour or so each day. After the third year he is permitted to get up and walk a little; the plaster jacket

¹Med. Press and Circular, Dec. 7, 1910.

may also be replaced by a movable apparatus, made of leather or celluloid, and removed at night.

Where possible, the patient should be placed, from the very outset of the treatment, at the seaside, and in a dwelling exposed to the sunlight and to the full breeze of the sea.

SOCIETY PROCEEDINGS.

THE EASTERN MEDICAL SOCIETY OF NEW YORK.

The regular monthly meeting of the Eastern Medical Society of the City of New York was held at the Cafe Boulevard, Friday evening, December 9, 1910, President Rongy in the chair. A large amount of executive business was attended to, including the annual election of officers, a full list of which will appear in our next issue.

After the executive session, the annual address was delivered by James J. Walsh, M. D., LL. D., on the subject of *Psychotherapy in Organic Disease*. This will appear in full in the January number. Following adjournment a collation was served and enjoyed by the large number present.

THE YORKVILLE MEDICAL SOCIETY.

The regular monthly meeting of the Yorkville Medical Society was held at the Aschenbroedel Club House on Thursday evening, December 1, 1910, President Dittrich in the chair. The following was the scientific program of the evening:

1. Gynaecological specimens, Dr. Sidney D. Jacobson.
2. Complicated ectopic, Dr. Joseph Gutfreund.
3. Situs inversus of the heart, Dr. Sigmund Breitenfeld.
4. A typical case of Hansen's disease, Dr. Ludwig Oulman.
5. A case of chronic nasal pansinusitis, Dr. Otto Glogau.
6. Chronic Appendicitis in a case of complete situs inversus, Dr. Jacob Heckmann.

7. Epithelioma of the nose, treated with As_2O_3 , Dr. Eberhard W. Dittrich.

PAPER OF THE EVENING:

The Physician in Court, Dr. Lincoln R. Graham.

Supplemented by addresses of the Hon. Joseph I. Green and the Hon. Frank F. Davis.

Discussion.

This important paper will appear in the January issue of AMERICAN MEDICINE.

SURGICAL HINTS.

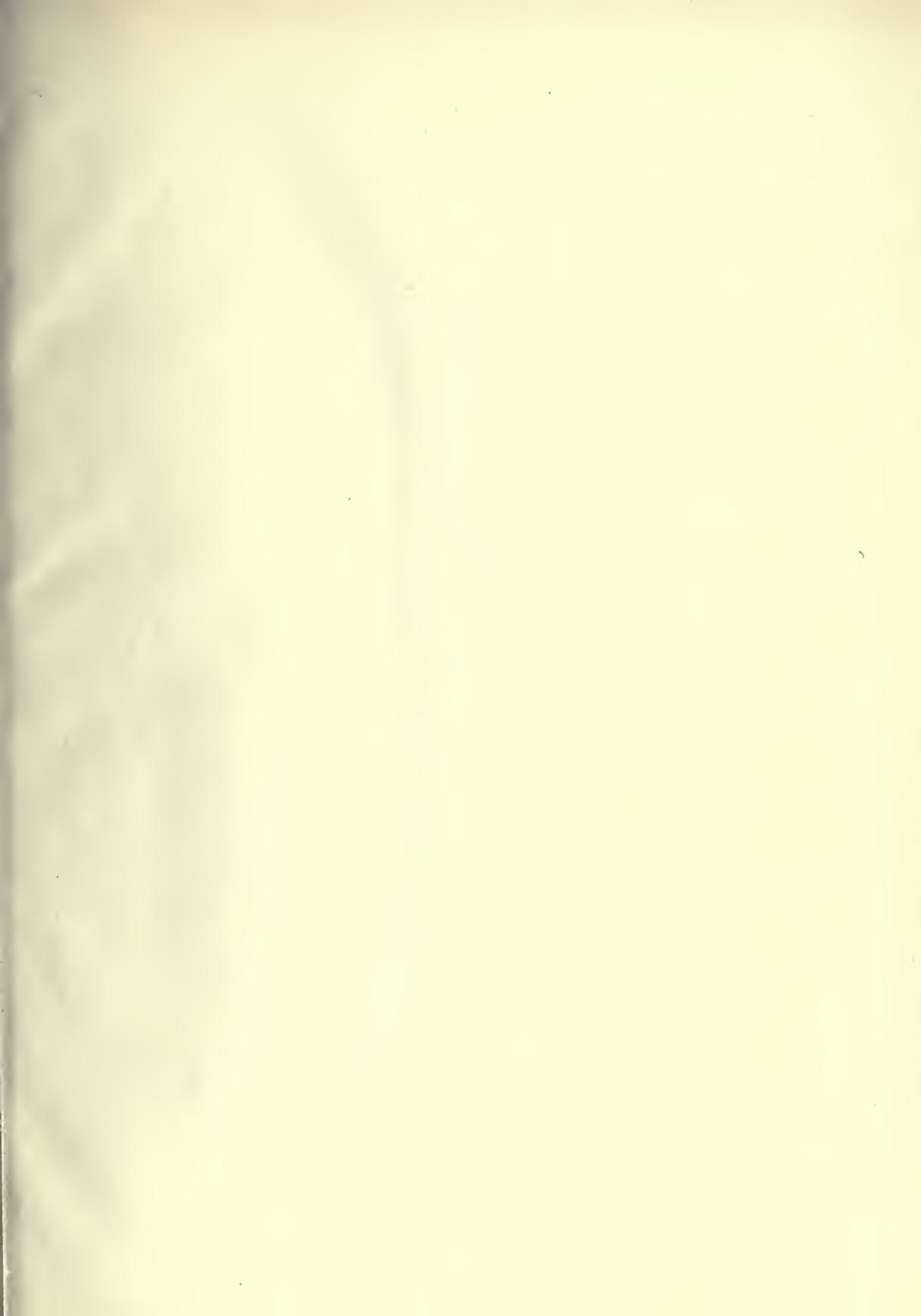
Persistent lymphedema of the breast may be the first, and for a long time the only sign of a scirrhus carcinoma.

The injection through a ureter catheter of sterile olive oil against or, preferably, behind a small stone lodged in the ureter very often determines its expulsion into the bladder.

Prostatic massage for gonorrheal prostatitis is not limited in its usefulness to chronic cases. In some cases of fairly acute gonorrheal prostatitis the symptoms do not abate until daily expression of the pus by massage is undertaken, and then they subside very quickly. Such a treatment must be undertaken only upon proper indications, however; otherwise employed in acute cases it will cause mischief.—*Amer. Jour. of Surgery*.

In a case of known or suspected visceral carcinoma, the finding of small nodules in or just beneath the skin is of vast diagnostic and prognostic importance. If an excised nodule is shown to be cancerous this will at once establish both the diagnosis and the futility of operation. In cases of intra-abdominal carcinoma these superficial metastases are curiously, most often found in the skin to the left of and below the umbilicus.—*Am. Jour. of Surgery*.

When the appendix is so placed that its tip is not readily delivered the "retrograde" removal of the organ is often the simplest and safest method.





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